

0059368

SAF-B03-020
117-DR Quick Turn Analysis
FINAL DATA PACKAGE

FAX RESULTS TO:

Rikki Thoren 372-2183

N/A
INITIAL/DATE

VERIFICATION OF CLIENT RECEIPT:

Phone or CC:Mail to Rikki Thoren

N/A
INITIAL/DATE

COMPLETE COPY OF DATA PACKAGE TO:

Rikki Thoren

X9-05

BQ 3/24/03
INITIAL/DATE

COMMENTS: (PLEASE INCLUDE THE FOLLOWING ON THE FAX COVER SHEET)

SDG

W03954

SAF-B03-020

Rad only

Chem only

X

Rad & Chem

X Complete

Partial

RECEIVED
MAY 19 2003
EDMC

Analytical Data Package Prepared For

Bechtel Hanford



Radiochemical Analysis By

STL Richland

2800 G.W. Way, Richland Wa, 99352, (509)-375-3131.

Assigned Laboratory Code: STLRL

Data Package Contains 101 Pages

Report No.: 21956

SDG No.	Order No.	Client Sample ID (List Order)	Lot-Sa No.	Work Order	Report DB ID	Batch No.
W03954	B02-030	J00FB6	J3A220291-2	FGHGV1AA	9FGHGV10	3024338
		J00FB6	J3A220291-2	FGHGV1AF	9FGHGV10	3024342
		J00FB6	J3A220291-2	FGHGV1AG	9FGHGV10	3024343
		J00FB6	J3A220291-2	FGHGV1AC	9FGHGV10	3024344
		J00FB6	J3A220291-2	FGHGV1AE	9FGHGV10	3024345
		J00FB6	J3A220291-2	FGHGV1AD	9FGHGV10	3024346
		J00FB6	J3A220291-2	FGHGV1AK	9FGHGV10	3024348
		J00FB6	J3A220291-2	FGHGV1AJ	9FGHGV10	3024349
		J00FB6	J3A220291-2	FGHGV1AL	9FGHGV10	3024350
		J00FB6	J3A220291-2	FGHGV1AV	9FGHGV10	3051473
		J00FB6	J3A220291-2	FGHGV2AT	9FGHGV20	3062565
		J00FB7	J3A220291-1	FGHGQ1AA	9FGHGQ10	3024338
		J00FB7	J3A220291-1	FGHGQ1AF	9FGHGQ10	3024342
		J00FB7	J3A220291-1	FGHGQ1AG	9FGHGQ10	3024343
		J00FB7	J3A220291-1	FGHGQ1AC	9FGHGQ10	3024344
		J00FB7	J3A220291-1	FGHGQ1AE	9FGHGQ10	3024345
		J00FB7	J3A220291-1	FGHGQ1AD	9FGHGQ10	3024346
		J00FB7	J3A220291-1	FGHGQ1AK	9FGHGQ10	3024348
		J00FB7	J3A220291-1	FGHGQ1AJ	9FGHGQ10	3024349
		J00FB7	J3A220291-1	FGHGQ1AL	9FGHGQ10	3024350
		J00FB7	J3A220291-1	FGHGQ1AW	9FGHGQ10	3051473
		J00FB7	J3A220291-1	FGHGQ2AV	9FGHGQ20	3062565

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc.
3350 George Washington Way
Richland, WA 99352

March 18, 2003

Attention: Joan Kessner

FINAL REPORT

SAF Number	:	B02-030
Date SDG Closed	:	January 22, 2003
Number of Samples	:	Two(2)
Sample Type	:	Soil
SDG Number	:	W03954
Data Deliverable	:	21-Day / Summary

I. Introduction

On January 22, 2003, two soil samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Bechtel Hanford, Inc. (BHI) specific IDs:

<u>STLR ID#</u>	<u>BHI ID#</u>	<u>MATRIX</u>	<u>DATE OF RECEIPT</u>
FGHGQ	J00FB7	SOIL	1/22/03
FGHGV	J00FB6	SOIL	1/22/03

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy

Americium-241 by method RICH-RC-5010

Plutonium-238 and 239/240 by method RICH-RC-5010

Uranium-234, 235, 238 by method RICH-RC-5079

Gas Proportional Counting

Total Strontium by method RICH-RC-5006

Severn Trent Laboratories, Inc.

STL Richland • 2800 George Washington Way, Richland, WA 99352

Tel 509 375 3131 Fax 509 375 5590 • www.stl-inc.com

Liquid Scintillation Counting

Tritium by method RICH-RC-5037

Carbon-14 by method RICH-RC-5022

Nickel-63 by method RICH-RC-5069

Plutonium-241 by method RICH-RC-5010

Gamma Spectroscopy

Gamma Spec by method RICH-RC-5017

Nickel-59 by method RICH-RC-5069

Chemical Analyses

Chromium Hex by EPA method 7196A

III. Quality Control

The analytical results for each analysis performed under SDG W03954 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Alpha Spectroscopy

Americium-241 by method RICH-RC-5010:

The LCS, batch blank, sample duplicate (J00FB7), and sample results are within contractual requirements.

Plutonium-238 and 239/240 by method RICH-RC-5010:

The batch blank, matrix blank, spike, and matrix spike have low yields (12.3%, 10%, 7.6%, 8.1% respectively). The sample and duplicate tracer yields are acceptable at 35%, 58% and 75%. The sample results are all below 0.03 pCi/g. The client was contacted for direction. Direction was given to report the results documenting these issues. Potentially, better plutonium isotopic analyses will result from the plutonium-241 analysis. If so, we will report the best data in the final report. Except as noted, the LCS, batch blank, sample duplicate (J00FB7), and sample results are within contractual requirements.

The re-analysis batch plutonium isotopic for obtaining tracer yields for Pu-241, was re-analyzed as well. We now have three analyses for plutonium isotopic. Each batch had a different problem; low yield for sample, high yield for blanks. The original results are supported by the two sets of re-runs. We will report the original results as the final plutonium isotopic results.

Bechtel Hanford, Inc.

March 18, 2003

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Uranium-234, 235, 238 by method RICH-RC-5079:

The LCS, batch blank, sample duplicate (J00FB7), and sample results are within contractual requirements.

Gas Proportional Counting

Total Strontium by method RICH-RC-5006:

The LCS, batch blank, sample duplicate (J00FB6), and sample results are within contractual requirements.

Liquid Scintillation Counting

Tritium by method RICH-RC-5037:

The LCS, batch blank, sample duplicate (J00FB6), and sample results are within contractual requirements.

Carbon-14 by method RICH-RC-5022:

The LCS, batch blank, sample duplicate (J00FB6), and sample results are within contractual requirements.

Nickel-63 by method RICH-RC-5069:

The LCS, batch blank, sample duplicate (J00FB7), and sample results are within contractual requirements.

Plutonium-241 by method RICH-RC-5010:

The batch blank and matrix blank yields were high (157% and 127%). Except as noted, the LCS, batch blank, sample duplicate (J00FB7), and sample results are within contractual requirements.

Gamma Spectroscopy

Gamma Spec by method RICH-RC-5017:

The LCS, batch blank, sample duplicate (J00FB6), and sample results are within contractual requirements.

Nickel-59 by method RICH-RC-5069:

The LCS, batch blank, sample duplicate (J00FB6), and sample results are within contractual requirements.

Chemical Analyses

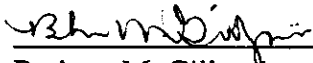
Chromium Hex by EPA method 7196A:

The LCS, batch blank, sample duplicate (J00FB7), matrix spike (J00FB7), color (J00FB7 PbCrO4) spike, and sample results are within contractual requirements.

Bechtel Hanford, Inc.
March 18, 2003
Page 4

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:



Barbara M. Gillespie
Project Manager

Drinking Water Method Cross References

DRINKING WATER ASTM METHOD CROSS REFERENCES		
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-241 (unless otherwise specified in the case narrative)		
The Gross Beta LCS is prepared with Sr/Y-90 (unless otherwise specified in the case narrative)		

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, $R = \text{constants} * f(x,y,z,...)$. The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/\sqrt{n}), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

Report Definitions

Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) <i>u_c - Combined Uncertainty.</i>	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, <i>u_c the combined uncertainty</i> . The uncertainty is absolute and in the same units as the result.
(#s), Coverage Factor CRDL (RL)	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations. Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL).
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. $Lc = (1.645 * \text{Sqrt}(2 * (\text{BkgndCnt}/\text{BkgndCntMin}) / \text{SCntMin})) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. $MDC = (4.65 * \text{Sqrt}((\text{BkgndCnt}/\text{BkgndCntMin}) / \text{SCntMin}) + 2.71 / \text{SCntMin}) * (\text{ConvFct}/(\text{Eff} * \text{Yld} * \text{Abn} * \text{Vol}) * \text{IngrFct})$. For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S-D)/[\text{sqrt}(\text{TPUs}^2 + \text{TPUd}^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.

Sample Results Summary

Date: 19-Mar-03

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 21956

SDG No: W03954

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)		Qual	Units	Yield	MDC or MDA	CRDL	RPD
3051473 NI59_GS										
	J00FB6									
	FGHGV1AV	NI-59	1.59E-01	+- 2.5E+00	U	pCi/g	85.62%	4.23E+00	3.00E+01	
	J00FB6 DUP									
	FGHGV1A	NI-59	1.13E+00	+- 2.2E+00	U	pCi/g	92.45%	3.91E+00	3.00E+01	
	J00FB7									
	FGHGQ1A	NI-59	-3.01E+00	+- 2.4E+00	U	pCi/g	85.85%	3.74E+00	3.00E+01	
3024342 PUIISO_PLATE_AEA										
	J00FB6									
	FGHGV1AF	PU-238	4.40E-03	+- 8.8E-03	U	pCi/g	74.96%	1.19E-02	1.00E+00	
		PU239/40	7.92E-03	+- 1.3E-02	U	pCi/g	74.96%	2.11E-02	1.00E+00	
	J00FB7									
	FGHGQ1AF	PU-238	0.00E+00	+- 2.3E-02	U	pCi/g	35.26%	2.54E-02	1.00E+00	
		PU239/40	9.38E-03	+- 1.9E-02	U	pCi/g	35.26%	2.54E-02	1.00E+00	
	J00FB7 DUP									
	FGHGQ1AQ	PU-238	5.92E-03	+- 1.2E-02	U	pCi/g	57.59%	1.61E-02	1.00E+00	200.0
		PU239/40	5.92E-03	+- 1.2E-02	U	pCi/g	57.59%	1.60E-02	1.00E+00	45.2
3024343 AMCMISO_EIE_PLT_AEA										
	J00FB6									
	FGHGV1AG	AM-241	6.62E-02	+- 3.6E-02		pCi/g	100.67%	1.20E-02	1.00E+00	
	J00FB7									
	FGHGQ1AG	AM-241	1.34E-02	+- 1.9E-02	U	pCi/g	61.95%	1.82E-02	1.00E+00	
	J00FB7 DUP									
	FGHGQ1AR	AM-241	3.03E-02	+- 2.5E-02		pCi/g	85.81%	1.37E-02	1.00E+00	77.1
3024344 UIISO_IE_PLATE_AEA										
	J00FB6									
	FGHGV1AC	U-234	4.64E-01	+- 1.5E-01		pCi/g	76.82%	6.39E-02	1.00E+00	
		U-235	2.08E-02	+- 3.1E-02	U	pCi/g	76.82%	5.80E-02	1.00E+00	
		U-238	4.35E-01	+- 1.4E-01		pCi/g	76.82%	7.37E-02	1.00E+00	
	J00FB7									
	FGHGQ1AC	U-234	4.69E-01	+- 1.5E-01		pCi/g	81.97%	6.65E-02	1.00E+00	
		U-235	2.35E-02	+- 2.8E-02	U	pCi/g	81.97%	4.37E-02	1.00E+00	
		U-238	5.17E-01	+- 1.6E-01		pCi/g	81.97%	7.63E-02	1.00E+00	
	J00FB7 DUP									
	FGHGQ1AT	U-234	4.53E-01	+- 1.4E-01		pCi/g	88.39%	3.79E-02	1.00E+00	3.4
		U-235	5.36E-03	+- 1.4E-02	U	pCi/g	88.39%	3.21E-02	1.00E+00	125.7
		U-238	4.52E-01	+- 1.4E-01		pCi/g	88.39%	4.23E-02	1.00E+00	13.5
3024348 GAMMA_GS										
	J00FB6									
	FGHGV1AK	BA-133	-9.60E-03	+- 1.4E-02	U	pCi/g		2.00E-02		

STL Richland

RPD - Relative Percent Difference.

rptSTLRichSaSum
mary2 V3.99 A97

U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

Date: 19-Mar-03

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 21956

SDG No: W03954

Batch	Client Id Work Order	Parameter	Result + Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
3024348	GAMMA_GS								
	J00FB6								
	FGHGV1AK	CO-60	6.59E-03 +- 1.2E-02	U	pCi/g		2.14E-02	5.00E-02	
		CS-137	2.88E-03 +- 1.2E-02	U	pCi/g		2.04E-02	1.00E-01	
		EU-152	4.97E-02 +- 3.7E-02	U	pCi/g		5.17E-02	1.00E-01	
		EU-154	-4.11E-02 +- 4.1E-02	U	pCi/g		6.54E-02	1.00E-01	
		EU-155	5.00E-02 +- 2.8E-02	U	pCi/g		4.69E-02	1.00E-01	
	J00FB6 DUP								
	FGHGV1AP	BA-133	3.35E-02 +- 1.8E-02	U	pCi/g		2.60E-02		
		CO-60	9.31E-03 +- 1.3E-02	U	pCi/g		2.31E-02	5.00E-02	
		CS-137	3.49E-02 +- 1.5E-02	U	pCi/g		2.55E-02	1.00E-01	
		EU-152	-4.60E-02 +- 4.9E-02	U	pCi/g		5.64E-02	1.00E-01	
		EU-154	-2.04E-02 +- 4.2E-02	U	pCi/g		7.05E-02	1.00E-01	
		EU-155	4.90E-02 +- 3.9E-02	U	pCi/g		6.52E-02	1.00E-01	
	J00FB7								
	FGHQQ1AK	BA-133	3.53E-03 +- 1.3E-02	U	pCi/g		1.85E-02		
		CO-60	2.75E-04 +- 9.6E-03	U	pCi/g		1.66E-02	5.00E-02	
		CS-137	1.74E-02 +- 1.5E-02		pCi/g		1.62E-02	1.00E-01	
		EU-152	3.50E-02 +- 3.2E-02	U	pCi/g		4.57E-02	1.00E-01	
		EU-154	-3.16E-02 +- 3.1E-02	U	pCi/g		4.94E-02	1.00E-01	
		EU-155	3.11E-02 +- 2.6E-02	U	pCi/g		4.37E-02	1.00E-01	
3024346	SRTOT_SEP_PRECIP_GPC								
	J00FB6								
	FGHGV1AD	STRONTIUM	2.75E-02 +- 5.2E-02	U	pCi/g	89.20%	1.14E-01		
	J00FB6 DUP								
	FGHGV1AN	STRONTIUM	3.96E-02 +- 5.5E-02	U	pCi/g	87.80%	1.16E-01		36.2
	J00FB7								
	FGHQQ1AD	STRONTIUM	5.27E-02 +- 5.6E-02	U	pCi/g	88.10%	1.14E-01		
3024338	EPA7196								
	J00FB6								
	FGHGV1AA	HEXCHROME	3.50E-01 +- 1.6E-01	U	mg/kg	N/A	3.50E-01	3.50E-01	
	J00FB7								
	FGHQQ1AA	HEXCHROME	3.50E-01 +- 0.0E+00	U	mg/kg	N/A	8.00E-02	3.50E-01	
	J00FB7 DUP								
	FGHQQ1AN	HEXCHROME	4.20E-01 +- 0.0E+00		mg/kg	N/A	8.00E-02	3.50E-01	18.1
3024345	NI63LSC								
	J00FB6								
	FGHGV1AE	NI-63	4.49E+00 +- 5.6E+00	U	pCi/g	90.31%	6.45E+00	3.00E+01	
	J00FB7								
	FGHQQ1AE	NI-63	8.71E-01 +- 5.1E+00	U	pCi/g	95.53%	6.04E+00	3.00E+01	

STL Richland

RPD - Relative Percent Difference.

rptSTLRchSaSummary2 V3.99 A97

U Qual - Analyzed for, but the result is less than the Mdc/Mda/Total Uncert or gamma scan software did not identify the nuclide.

Sample Results Summary

Date: 19-Mar-03

STL Richland STLRL

Ordered by Method, Batch No., Client Sample ID.

Report No. : 21956

SDG No: W03954

Batch	Client Id Work Order	Parameter	Result +- Uncertainty (2s)	Qual	Units	Yield	MDC or MDA	CRDL	RPD
3024345	NI63LSC								
	J00FB7 DUP								
	FGHGQ1AU NI-63		7.53E+00 +- 5.5E+00		pCi/g	94.34%	6.10E+00	3.00E+01	158.5
3024349	906.0_H3_LSC								
	J00FB6								
	FGHGV1AJ H-3		2.73E-03 +- 1.3E-02	U	pCi/g	100.00%	2.94E-02	4.00E+02	
	J00FB6 DUP								
	FGHGV1AQ H-3		5.96E-03 +- 1.3E-02	U	pCi/g	100.00%	2.99E-02	4.00E+02	74.2
	J00FB7								
	FGHGQ1AJ H-3		9.63E-03 +- 1.3E-02	U	pCi/g	100.00%	2.91E-02	4.00E+02	
3024350	C14_LSC								
	J00FB6								
	FGHGV1AL C-14		8.28E-01 +- 3.9E-01		pCi/g	100.00%	7.96E-01	5.00E+01	
	J00FB6 DUP								
	FGHGV1AR C-14		3.14E-01 +- 3.8E-01	U	pCi/g	100.00%	7.98E-01	5.00E+01	90.1
	J00FB7								
	FGHGQ1AL C-14		4.22E-01 +- 3.8E-01	U	pCi/g	100.00%	7.98E-01	5.00E+01	
3062565	PU241_IE_LSC								
	J00FB6								
	FGHGV2AT PU-241		2.19E+00 +- 6.8E-01		pCi/g	66.70%	1.24E+00	1.50E+01	
	J00FB7								
	FGHGQ2AV PU-241		2.44E+00 +- 7.9E-01		pCi/g	56.60%	1.46E+00	1.50E+01	
	J00FB7 DUP								
	FGHGQ2A1 PU-241		2.67E+00 +- 8.1E-01		pCi/g	56.30%	1.48E+00	1.50E+01	8.9
No. of Results: 57									

STL Richland

RPD - Relative Percent Difference.

rptSTLRchSaSummary2 V3.99 A97

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

QC Results Summary
STL Richland STLRL
 Ordered by Method, Batch No, QC Type,.

Date: 19-Mar-03

Report No. : 21956

SDG No.: W03954

Batch	Work Order	Parameter	Result + Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC MDA
NI59_GS									
3051473 BLANK QC									
	FHOWV1AA	NI-59	2.09E+00 +- 2.9E+00	U	pCi/g	69.40%			5.29E+00
3051473 LCS									
	FHOWV1AC	NI-59	4.24E+02 +- 4.8E+01		pCi/g	65.18%	113.10%	0.1	8.77E+00
PUISO_PLATE_AEA									
3024342 BLANK QC									
	FGLTC1AA	PU-238	0.00E+00 +- 6.6E-02	U	pCi/g	12.33%			7.33E-02
		PU239/40	0.00E+00 +- 6.6E-02	U	pCi/g	12.33%			7.32E-02
3024342 LCS									
	FGLTC1AC	PU239/40	4.09E+00 +- 1.5E+00		pCi/g	7.58%	118.97%	0.2	1.18E-01
AMCMISO_EIE_PLT_AEA									
3024343 BLANK QC									
	FGLTF1AA	AM-241	8.56E-03 +- 1.2E-02	U	pCi/g	97.47%			1.16E-02
3024343 LCS									
	FGLTF1AC	AM-241	4.99E+00 +- 9.2E-01		pCi/g	85.39%	110.57%	0.1	1.32E-02
UIISO_IE_PLATE_AEA									
3024344 BLANK QC									
	FGLTK1AA	U-234	-5.28E-03 +- 1.5E-02	U	pCi/g	90.03%			5.89E-02
		U-235	-3.95E-03 +- 4.6E-03	U	pCi/g	90.03%			4.16E-02
		U-238	-3.96E-03 +- 1.5E-02	U	pCi/g	90.03%			5.66E-02
3024344 LCS									
	FGLTK1AC	U-234	3.06E+00 +- 6.4E-01		pCi/g	93.76%	91.51%	-0.1	3.81E-02
		U-238	3.44E+00 +- 7.1E-01		pCi/g	93.76%	98.25%	0.0	3.81E-02
GAMMA_GS									
3024348 BLANK QC									
	FGLT81AA	BA-133	4.43E-03 +- 1.2E-02	U	pCi/g				1.71E-02
		CO-60	-5.91E-03 +- 7.7E-03	U	pCi/g				1.27E-02
		CS-137	2.52E-03 +- 8.2E-03	U	pCi/g				1.44E-02
		EU-152	-6.83E-03 +- 2.5E-02	U	pCi/g				3.96E-02
		EU-154	-1.50E-02 +- 2.2E-02	U	pCi/g				3.61E-02
		EU-155	-2.15E-02 +- 3.1E-02	U	pCi/g				5.10E-02
3024348 LCS									
	FGLT81AC	CS-137	2.75E-01 +- 5.0E-02		pCi/g		95.36%	0.0	3.76E-02
		K-40	1.87E+01 +- 2.5E+00		pCi/g		95.83%	0.0	3.03E-01
		RA-226	1.05E+00 +- 1.6E-01		pCi/g		91.49%	-0.1	6.21E-02
		RA-228	2.06E+00 +- 3.1E-01		pCi/g		109.83%	0.1	1.21E-01
		U-238DHP	7.08E-01 +- 8.4E-01	U	pCi/g		67.38%	-0.3	8.75E-01
SRTOT_SEP_PRECIP_GPC									
3024346 BLANK QC									
	FGLT71AA	STRONTIUM	-1.75E-02 +- 5.2E-02	U	pCi/g	77.30%			1.31E-01
3024346 LCS									

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchQcSummary V3.99 A97 U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

QC Results Summary
STL Richland STLRL
 Ordered by Method, Batch No, QC Type,.

Date: 19-Mar-03

Report No. : 21956

SDG No.: W03954

Batch	Work Order	Parameter	Result +/- Uncertainty (2s)	Qual	Units	Yield	Recovery	Bias	MDC MDA
	FGLT71AC	STRONTIUM	1.10E+00 +/- 3.2E-01		pCi/g	78.60%	95.75%	0.0	1.26E-01
EPA7196									
	3024338	MATRIX SPIKE							
	FHGQ1AM	HEXCHROME	2.67E+01 +/- 0.0E+00		mg/kg	N/A	61.76%	-0.4	8.00E-02
	3024338	MATRIX SPIKE							
	FHGQ1AM	HEXCHROME	4.18E+01 +/- 0.0E+00		mg/kg	N/A	95.95%	0.0	8.00E-02
	3024338	LCS							
	FGLR31AC	HEXCHROME	4.00E+01 +/- 0.0E+00		mg/kg	N/A	91.88%	-0.1	8.00E-02
	3024338	BLANK QC							
	FGLR31AA	HEXCHROME	3.50E-01 +/- 0.0E+00	U	mg/kg	N/A			8.00E-02
NI63LSC									
	3024345	BLANK QC							
	FGLTP1AA	NI-63	5.31E+00 +/- 7.1E+00	U	pCi/g	73.04%			8.38E+00
	3024345	LCS							
	FGLTP1AC	NI-63	4.86E+02 +/- 4.4E+01		pCi/g	82.70%	96.05%	0.0	7.47E+00
906.0_H3_LSC									
	3024349	BLANK QC							
	FGLVA1AA	H-3	-3.86E-02 +/- 1.2E-01	U	pCi/g	100.00%			2.86E-01
	3024349	LCS							
	FGLVA1AC	H-3	1.32E+00 +/- 1.9E-01		pCi/g	100.00%	96.73%	0.0	2.92E-01
C14_LSC									
	3024350	BLANK QC							
	FGLVD1AA	C-14	7.83E-02 +/- 1.5E-01	U	pCi/g	100.00%			3.22E-01
	3024350	LCS							
	FGLVD1AC	C-14	7.15E+00 +/- 3.9E-01		pCi/g	100.00%	99.00%	0.0	3.21E-01
PU241_IE_LSC									
	3062565	BLANK QC							
	FJHPC1AA	PU-241	7.23E-01 +/- 2.8E-01		pCi/g	157.00%			5.39E-01
	FJHPC1AD	PU-241	9.04E-01 +/- 3.4E-01		pCi/g	127.40%			6.51E-01
	3062565	LCS							
	FJHPC1AE	PU-241	1.87E+01 +/- 1.6E+00		pCi/g	61.50%	81.92%	-0.2	1.35E+00
	FJHPC1AC	PU-241	1.67E+01 +/- 1.4E+00		pCi/g	74.60%	73.02%	-0.3	1.12E+00
No. of Results: 39									

FORM I

Date: 19-Mar-03

SAMPLE RESULTS

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:30:00 AM

Lot-Sample No.: J3A220291-2

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB6

COC No.: B02-030-037

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024338	EPA7196				Work Order: FG HGV1AA		Report DB ID: 9FG HGV10					
HEXCHROME	3.50E-01	U		1.6E-01	3.50E-01	mg/kg	N/A	(1.)	2/3/03		2.5	
							3.50E-01	(4.4)			G	
Batch: 3024342	PUISO_PLATE_AEA				Work Order: FG HGV1AF		Report DB ID: 9FG HGV10					
PU-238	4.40E-03	U	8.8E-03	8.8E-03	1.19E-02	pCi/g	74.96%	0.37	2/7/03 04:20 p		2.01	ALP128
							1.00E+00	1.			G	
PU239/40	7.92E-03	U	1.3E-02	1.3E-02	2.11E-02	pCi/g	74.96%	0.38	2/7/03 04:20 p		2.01	ALP128
						4.58E-03	1.00E+00	(1.3)			G	
Batch: 3024343	AMCMISO_EIE_PLT_AEA				Work Order: FG HGV1AG		Report DB ID: 9FG HGV10					
AM-241	6.62E-02		3.4E-02	3.6E-02	1.20E-02	pCi/g	100.67%	(5.5)	2/11/03 09:44 a		2.01	ALP128
							1.00E+00	(3.7)			G	
Batch: 3024344	UIISO_IE_PLATE_AEA				Work Order: FG HGV1AC		Report DB ID: 9FG HGV10					
U-234	4.64E-01		1.2E-01	1.5E-01	6.39E-02	pCi/g	76.82%	(7.3)	2/10/03 02:27 p		1.01	ALP3
						2.19E-02	1.00E+00	(6.2)			G	
U-235	2.08E-02	U	3.1E-02	3.1E-02	5.80E-02	pCi/g	76.82%	0.36	2/10/03 02:27 p		1.01	ALP3
						1.90E-02	1.00E+00	(1.3)			G	
U-238	4.35E-01		1.2E-01	1.4E-01	7.37E-02	pCi/g	76.82%	(5.9)	2/10/03 02:27 p		1.01	ALP3
						2.68E-02	1.00E+00	(6.1)			G	
Ratio U-234/238 = 1.1												
Batch: 3024345	NI63LSC				Work Order: FG HGV1AE		Report DB ID: 9FG HGV10					
NI-63	4.49E+00	U	2.8E+00	5.6E+00	6.45E+00	pCi/g	90.31%	0.7	2/7/03 10:43 a		0.255	LSC4
						3.15E+00	3.00E+01	(1.6)			G	

STL Richland

MDC|MDA,Lc - Detection, Decision Level based on Instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.


 rptSTLRchSample
 V3.99 A97

FORM I

SAMPLE RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:30:00 AM

Lot-Sample No.: J3A220291-2

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB6

COC No.: B02-030-037

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024346	SRTOT_SEP_PRECIP_GPC				Work Order: FG HGV1AD		Report DB ID: 9FG HGV10					
STRONTIUM	2.75E-02	U	5.1E-02	5.2E-02	1.14E-01	pCi/g	89.20%	0.24	2/1/03 07:41 p		6.0	GPC31B
						5.30E-02		(1.1)			G	
Batch: 3024348	GAMMA_GS				Work Order: FG HGV1AK		Report DB ID: 9FG HGV10					
BA-133	-9.60E-03	U	1.4E-02	1.4E-02	2.00E-02	pCi/g		-0.48	2/3/03 07:10 a		362.7	GER6\$1
								-(1.3)			g	
CO-60	6.59E-03	U	1.2E-02	1.2E-02	2.14E-02	pCi/g		0.31	2/3/03 07:10 a		362.7	GER6\$1
							5.00E-02	(1.1)			g	
CS-137	2.88E-03	U	1.2E-02	1.2E-02	2.04E-02	pCi/g		0.14	2/3/03 07:10 a		362.7	GER6\$1
							1.00E-01	0.49			g	
EU-152	4.97E-02	U	3.7E-02	3.7E-02	5.17E-02	pCi/g		0.96	2/3/03 07:10 a		362.7	GER6\$1
							1.00E-01	(2.7)			g	
EU-154	-4.11E-02	U	4.1E-02	4.1E-02	6.54E-02	pCi/g		-0.63	2/3/03 07:10 a		362.7	GER6\$1
							1.00E-01	-(2.)			g	
EU-155	5.00E-02	U	2.8E-02	2.8E-02	4.69E-02	pCi/g		(1.1)	2/3/03 07:10 a		362.7	GER6\$1
							1.00E-01	(3.5)			g	
Batch: 3024349	906.0_H3_LSC				Work Order: FG HGV1AJ		Report DB ID: 9FG HGV10					
H-3	2.73E-03	U	1.2E-02	1.3E-02	2.94E-02	pCi/g	100.00%	0.09	1/29/03 10:07 a		100.4	LSC6
						1.36E-02	4.00E+02	0.43			G	
Batch: 3024350	C14_LSC				Work Order: FG HGV1AL		Report DB ID: 9FG HGV10					
C-14	8.28E-01		3.6E-01	3.9E-01	7.96E-01	pCi/g	100.00%	(1.)	1/29/03 04:59 a		2.018	LSC6
						3.82E-01	5.00E+01	(4.2)			G	

STL Richland MDC|MDA, Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rptSTLRchSample U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.
 V3.99 A97

FORM I

SAMPLE RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:30:00 AM

Lot-Sample No.: J3A220291-2

Report No. : 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB6

COC No. : B02-030-037

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3051473	NI59_GS				Work Order: FG HGV1AV			Report DB ID: 9FG HGV10				
NI-59	1.59E-01	U		2.5E+00	4.23E+00	pCi/g	85.62%	0.04	2/28/03 03:27 p		1.02	LEP3\$1
							1.82E+00	3.00E+01			g	
Batch: 3062565	PU241_IE_LSC				Work Order: FG HGV2AT			Report DB ID: 9FG HGV20				
PU-241	2.19E+00		5.7E-01	6.8E-01	1.24E+00	pCi/g	66.70%	(1.8)	3/15/03 07:26 a		2.0	LSC4
							5.98E-01	1.50E+01			G	

No. of Results: 19 Comments:

FORM I

Date: 19-Mar-03

SAMPLE RESULTS

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:25:00 AM

Lot-Sample No.: J3A220291-1

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB7

COC No.: B02-030-038

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rsl/MDC, Rsl/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024338	EPA7196				Work Order: FGHGQ1AA		Report DB ID: 9FGHGQ10					
HEXCHROME	3.50E-01	U		0.0E+00	8.00E-02	mg/kg	N/A	(4.4)	2/3/03		2.5	
							3.50E-01	N/A			G	
Batch: 3024342	PUIISO_PLATE_AEA				Work Order: FGHGQ1AF		Report DB ID: 9FGHGQ10					
PU-238	0.00E+00	U	0.0E+00	2.3E-02	2.54E-02	pCi/g	35.26%	0.	2/7/03 04:19 p		2.05	ALP124
							1.00E+00	0.			G	
PU239/40	9.38E-03	U	1.9E-02	1.9E-02	2.54E-02	pCi/g	35.26%	0.37	2/7/03 04:19 p		2.05	ALP124
							1.00E+00	1.			G	
Batch: 3024343	AMCMISO_EIE_PLT_AEA				Work Order: FGHGQ1AG		Report DB ID: 9FGHGQ10					
AM-241	1.34E-02	U	1.9E-02	1.9E-02	1.82E-02	pCi/g	61.95%	0.74	2/11/03 09:44 a		2.05	ALP124
							1.00E+00	(1.4)			G	
Batch: 3024344	UIISO_IE_PLATE_AEA				Work Order: FGHGQ1AC		Report DB ID: 9FGHGQ10					
U-234	4.69E-01		1.2E-01	1.5E-01	6.65E-02	pCi/g	81.97%	(7.1)	2/10/03 02:26 p		1.04	ALP1
							2.39E-02	1.00E+00			G	
U-235	2.35E-02	U	2.8E-02	2.8E-02	4.37E-02	pCi/g	81.97%	0.54	2/10/03 02:26 p		1.04	ALP1
							1.25E-02	1.00E+00			G	
U-238	5.17E-01		1.2E-01	1.6E-01	7.63E-02	pCi/g	81.97%	(6.8)	2/10/03 02:26 p		1.04	ALP1
							2.88E-02	1.00E+00			G	
Ratio U-234/238 = 0.9												
Batch: 3024345	NI63LSC				Work Order: FGHGQ1AE		Report DB ID: 9FGHGQ10					
NI-63	8.71E-01	U	2.5E+00	5.1E+00	6.04E+00	pCi/g	95.53%	0.14	2/7/03 07:19 a		0.255	LSC4
							2.95E+00	3.00E+01			G	

STL Richland MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
 rptSTLRchSample U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.
 V3.99 A97

FORM I

SAMPLE RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:25:00 AM

Lot-Sample No.: J3A220291-1

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB7

COC No.: B02-030-038

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024346	SRTOT_SEP_PRECIP_GPC				Work Order: FGHHQ1AD			Report DB ID: 9FGHHQ10				
STRONTIUM	5.27E-02	U	5.4E-02	5.6E-02	1.14E-01	pCi/g	88.10%	0.46	2/1/03 07:41 p		6.0	GPC31A
						5.30E-02		(1.9)			G	
Batch: 3024348	GAMMA_GS				Work Order: FGHHQ1AK			Report DB ID: 9FGHHQ10				
BA-133	3.53E-03	U	1.3E-02	1.3E-02	1.85E-02	pCi/g		0.19	2/3/03 05:14 p		385.4	GER8\$1
								0.55			g	
CO-60	2.75E-04	U	9.6E-03	9.6E-03	1.66E-02	pCi/g		0.02	2/3/03 05:14 p		385.4	GER8\$1
							5.00E-02	0.06			g	
CS-137	1.74E-02		1.5E-02	1.5E-02	1.62E-02	pCi/g		(1.1)	2/3/03 05:14 p		385.4	GER8\$1
							1.00E-01	(2.3)			g	
EU-152	3.50E-02	U	3.2E-02	3.2E-02	4.57E-02	pCi/g		0.76	2/3/03 05:14 p		385.4	GER8\$1
							1.00E-01	(2.2)			g	
EU-154	-3.16E-02	U	3.1E-02	3.1E-02	4.94E-02	pCi/g		-0.64	2/3/03 05:14 p		385.4	GER8\$1
							1.00E-01	-(2.1)			g	
EU-155	3.11E-02	U	2.6E-02	2.6E-02	4.37E-02	pCi/g		0.71	2/3/03 05:14 p		385.4	GER8\$1
							1.00E-01	(2.4)			g	
Batch: 3024349	906.0_H3_LSC				Work Order: FGHHQ1AJ			Report DB ID: 9FGHHQ10				
H-3	9.63E-03	U	1.2E-02	1.3E-02	2.91E-02	pCi/g	100.00%	0.33	1/29/03 09:25 a		100.9	LSC6
						1.35E-02	4.00E+02	(1.5)			G	
Batch: 3024350	C14_LSC				Work Order: FGHHQ1AL			Report DB ID: 9FGHHQ10				
C-14	4.22E-01	U	3.4E-01	3.8E-01	7.98E-01	pCi/g	100.00%	0.53	1/29/03 04:17 a		2.013	LSC6
						3.83E-01	5.00E+01	(2.2)			G	

STL Richland
rptSTLRchSample
V3.99 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM I

SAMPLE RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:25:00 AM

Lot-Sample No.: J3A220291-1

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB7

COC No.: B02-030-038

Matrix: SOIL

Ordered by Client Sample ID, Batch No.

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, Lc	Yield CRDL(RL)	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3051473	NI59_GS				Work Order: FGHGQ1AW		Report DB ID: 9FGHGQ10					
NI-59	-3.01E+00	U		2.4E+00	3.74E+00	pCi/g	85.85%	-0.8	2/28/03 03:13 p		1.02	LEP2\$1
							1.61E+00	3.00E+01	-(2.5)		g	
Batch: 3062565	PU241_IE_LSC				Work Order: FGHGQ2AV		Report DB ID: 9FGHGQ20					
PU-241	2.44E+00		6.6E-01	7.9E-01	1.46E+00	pCi/g	56.60%	(1.7)	3/15/03 04:02 a		2.03	LSC4
							7.00E-01	1.50E+01	(6.2)		G	

No. of Results: 19 Comments:

FORM II

Date: 19-Mar-03

DUPLICATE RESULTS

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:30:00 AM

Lot-Sample No.: J3A220291-2

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB6 DUP

COC No.: B02-030-037

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024348	SRTOT_SEP_PRECIP_GPC			Work Order: FG HGV1AN		Report DB ID: FG HGV1NR		Orig Sa DB ID: 9FG HGV10				
STRONTIUM	3.96E-02	U	5.4E-02	5.5E-02	1.16E-01	pCi/g	87.80%	0.34	2/1/03 07:41 p		6.0	GPC31D
	2.75E-02	U	RPD	36.2				(1.5)			G	
Batch: 3024348	GAMMA_GS			Work Order: FG HGV1AP		Report DB ID: FG HGV1PR		Orig Sa DB ID: 9FG HGV10				
BA-133	3.35E-02	U	1.8E-02	1.8E-02	2.60E-02	pCi/g		(1.3)	2/3/03 05:17 p		362.7	GER1\$1
	-9.60E-03	U	RPD	360.8				(3.7)			g	
CO-60	9.31E-03	U	1.3E-02	1.3E-02	2.31E-02	pCi/g		0.4	2/3/03 05:17 p		362.7	GER1\$1
	6.59E-03	U	RPD	34.2		5.00E-02		(1.4)			g	
CS-137	3.49E-02	U	1.5E-02	1.5E-02	2.55E-02	pCi/g		(1.4)	2/3/03 05:17 p		362.7	GER1\$1
	2.88E-03	U	RPD	169.5		1.00E-01		(4.7)			g	
EU-152	-4.60E-02	U	4.9E-02	4.9E-02	5.64E-02	pCi/g		-0.82	2/3/03 05:17 p		362.7	GER1\$1
	4.97E-02	U	RPD	5133.6		1.00E-01		-(1.9)			g	
EU-154	-2.04E-02	U	4.2E-02	4.2E-02	7.05E-02	pCi/g		-0.29	2/3/03 05:17 p		362.7	GER1\$1
	-4.11E-02	U	RPD	-67.2		1.00E-01		-0.97			g	
EU-155	4.90E-02	U	3.9E-02	3.9E-02	6.52E-02	pCi/g		0.75	2/3/03 05:17 p		362.7	GER1\$1
	5.00E-02	U	RPD	2.0		1.00E-01		(2.5)			g	
Batch: 3024349	906.0_H3_LSC			Work Order: FG HGV1AQ		Report DB ID: FG HGV1QR		Orig Sa DB ID: 9FG HGV10				
H-3	5.96E-03	U	1.2E-02	1.3E-02	2.99E-02	pCi/g	100.00%	0.2	1/29/03 10:49 a		100.6	LSC6
	2.73E-03	U	RPD	74.2		4.00E+02		0.91			G	
Batch: 3024350	C14_LSC			Work Order: FG HGV1AR		Report DB ID: FG HGV1RR		Orig Sa DB ID: 9FG HGV10				

STL Richland

RPD - Relative Percent Difference.

rptSTLRchDupV3.
99 A97

MDC|MDA, Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 19-Mar-03

DUPLICATE RESULTS

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:30:00 AM

Lot-Sample No.: J3A220291-2

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB6 DUP

COC No.: B02-030-037

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/Tot/Ucert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
C-14	3.14E-01	U	3.4E-01	3.8E-01	7.98E-01	pCi/g	100.00%	0.39	1/29/03 05:41 a		2.012	LSC6
	8.28E-01		RPD 90.1			5.00E+01		(1.7)			G	
Batch: 3051473	NI59_GS				Work Order: FGHGV1AW	Report DB ID: FGHGV1WR			Orig Sa DB ID: 9FGHGV10			
NI-59	1.13E+00	U		2.2E+00	3.91E+00	pCi/g	92.45%	0.29	2/28/03 05:02 p		1.0	LEP2\$1
	1.59E-01	U	RPD 150.8			3.00E+01		(1.)			g	

No. of Results: 10 Comments:

STL Richland

RPD - Relative Percent Difference.

rptSTLRchDupV3.
99 A97MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

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FORM II

Date: 19-Mar-03

DUPLICATE RESULTS

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:25:00 AM

Lot-Sample No.: J3A220291-1

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB7 DUP

COC No.: B02-030-038

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024338	EPA7196				Work Order: FGHGQ1AN			Report DB ID: FGHGQ1NR	Orig Sa DB ID: 9FGHGQ10			
HEXCHROME	4.20E-01			0.0E+00	8.00E-02	mg/kg	N/A	(5.2)	2/3/03		2.5	
	3.50E-01	U	RPD 18.1			3.50E-01		N/A			G	
Batch: 3024342	PUISO_PLATE_AEA				Work Order: FGHGQ1AQ			Report DB ID: FGHGQ1QR	Orig Sa DB ID: 9FGHGQ10			
PU-238	5.92E-03	U	1.2E-02	1.2E-02	1.61E-02	pCi/g	57.59%	0.37	2/7/03 04:20 p		2.0	ALP127
	0.00E+00	U	RPD 200.0			1.00E+00		1.			G	
PU239/40	5.92E-03	U	1.2E-02	1.2E-02	1.60E-02	pCi/g	57.59%	0.37	2/7/03 04:20 p		2.0	ALP127
	9.38E-03	U	RPD 45.2			1.00E+00		1.			G	
Alpha Spec Result Sum = 1.2E-02												
Batch: 3024343	AMCMISO_EIE_PLT_AEA				Work Order: FGHGQ1AR			Report DB ID: FGHGQ1RR	Orig Sa DB ID: 9FGHGQ10			
AM-241	3.03E-02		2.5E-02	2.5E-02	1.37E-02	pCi/g	85.81%	(2.2)	2/11/03 09:44 a		2.0	ALP127
	1.34E-02	U	RPD 77.1			1.00E+00		(2.4)			G	
Alpha Spec Result Sum = 4.2E-02												
Batch: 3024344	UIISO_IE_PLATE_AEA				Work Order: FGHGQ1AT			Report DB ID: FGHGQ1TR	Orig Sa DB ID: 9FGHGQ10			
U-234	4.53E-01		1.1E-01	1.4E-01	3.79E-02	pCi/g	88.39%	(12.)	2/10/03 02:26 p		1.02	ALP2
	4.69E-01		RPD 3.4			1.00E+00		(6.5)			G	
U-235	5.36E-03	U	1.4E-02	1.4E-02	3.21E-02	pCi/g	88.39%	0.17	2/10/03 02:26 p		1.02	ALP2
	2.35E-02	U	RPD 125.7			1.00E+00		0.78			G	
U-238	4.52E-01		1.1E-01	1.4E-01	4.23E-02	pCi/g	88.39%	(10.7)	2/10/03 02:26 p		1.02	ALP2
	5.17E-01		RPD 13.5			1.00E+00		(6.4)			G	

STL Richland
rptSTLRchDupV3.
99 A97

RPD - Relative Percent Difference.

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

Date: 19-Mar-03

DUPLICATE RESULTS

Lab Name: STL Richland

SDG: W03954

Collection Date: 1/21/2003 8:25:00 AM

Lot-Sample No.: J3A220291-1

Report No.: 21956

Received Date: 1/22/2003 3:15:00 PM

Client Sample ID: J00FB7 DUP

COC No.: B02-030-038

Matrix: SOIL

Parameter	Result, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MDA, Action Lev	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024345	NI63LSC				Work Order: FGHGQ1AU	Report DB ID: FGHGQ1UR			Orig Sa DB ID: 9FGHGQ10			
NI-63	7.53E+00		2.7E+00	5.5E+00	6.10E+00	pCi/g	94.34%	(1.2)	2/7/03 09:01 a		0.257	LSC4
	8.71E-01	U	RPD 158.5			3.00E+01		(2.7)			G	
Batch: 3062565	PU241_IE_LSC				Work Order: FGHGQ2A1	Report DB ID: FGHGQ21R			Orig Sa DB ID: 9FGHGQ20			
PU-241	2.67E+00		6.7E-01	8.1E-01	1.48E+00	pCi/g	56.30%	(1.8)	3/15/03 05:44 a		2.0	LSC4
	2.44E+00		RPD 8.9			1.50E+01		(6.6)			G	

No. of Results: 9 Comments:

STL Richland

RPD - Relative Percent Difference.

rptSTLRchDupV3.
99 A97MDC|MDA,Le - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Matrix: SOIL

Report No. : 21956

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD A,	Rpt Unit, CRDI	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
Batch: 3024338	EPA7196				Work Order: FGLR31AA	Report DB ID: FGLR31AB						
HEXCHROME	3.50E-01	U		0.0E+00	8.00E-02	mg/kg	N/A	(4.4)	2/3/03		2.5	
						3.50E-01		N/A			G	
Batch: 3024350	C14_LSC				Work Order: FGLVD1AA	Report DB ID: FGLVD1AB						
C-14	7.83E-02	U	1.4E-01	1.5E-01	3.22E-01	pCi/g	100.00%	0.24	1/29/03 02:53 a		5.0	LSC6
					1.54E-01	5.00E+01		(1.)			G	
Batch: 3024342	PUISO_PLATE_AEA				Work Order: FGLTC1AA	Report DB ID: FGLTC1AB						
PU-238	0.00E+00	U	0.0E+00	6.6E-02	7.33E-02	pCi/g	12.33%	0.	2/7/03 04:21 p		2.0	ALP129
						1.00E+00		0.			G	
PU239/40	0.00E+00	U	0.0E+00	6.6E-02	7.32E-02	pCi/g	12.33%	0.	2/7/03 04:21 p		2.0	ALP129
						1.00E+00		0.			G	
Batch: 3024343	AMCMISO_EIE_PLT_AEA				Work Order: FGLTF1AA	Report DB ID: FGLTF1AB						
AM-241	8.56E-03	U	1.2E-02	1.2E-02	1.16E-02	pCi/g	97.47%	0.74	2/11/03 09:44 a		2.0	ALP129
						1.00E+00		(1.4)			G	
Batch: 3024344	UIISO_IE_PLATE_AEA				Work Order: FGLTK1AA	Report DB ID: FGLTK1AB						
U-234	-5.28E-03	U	1.5E-02	1.5E-02	5.89E-02	pCi/g	90.03%	-0.09	2/10/03 02:27 p		1.0	ALP4
					2.06E-02	1.00E+00		-0.69			G	
U-235	-3.95E-03	U	4.6E-03	4.6E-03	4.16E-02	pCi/g	90.03%	-0.1	2/10/03 02:27 p		1.0	ALP4
					1.19E-02	1.00E+00		-(1.7)			G	
U-238	-3.96E-03	U	1.5E-02	1.5E-02	5.66E-02	pCi/g	90.03%	-0.07	2/10/03 02:27 p		1.0	ALP4
					1.94E-02	1.00E+00		-0.52			G	
Ratio U-234/238 = 1.3												
Batch: 3051473	NI59_GS				Work Order: FH0WV1AA	Report DB ID: FH0WV1AB						

STL Richland
rptSTLRchBlank
V3.99 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.
U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

BLANK RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Matrix: SOIL

Report No. : 21956

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD A,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUncert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
NI-59	2.09E+00	U		2.9E+00	5.29E+00 1.84E+00	pCi/g 3.00E+01	69.40%	0.39 (1.4)	2/28/03 09:40 p		1.0 g	LEP3\$1
Batch: 3024345	NI63LSC				Work Order: FGLTP1AA	Report DB ID: FGLTP1AB						
NI-63	5.31E+00	U	3.5E+00	7.1E+00	8.38E+00 4.09E+00	pCi/g 3.00E+01	73.04%	0.63 (1.5)	2/7/03 12:24 p		0.25 G	LSC4
Batch: 3062565	PU241_IE_LSC				Work Order: FJHPC1AA	Report DB ID: FJHPC1AB						
PU-241	7.23E-01		2.4E-01	2.8E-01	5.39E-01 2.59E-01	pCi/g 1.50E+01	157.00%	(1.3) (5.1)	3/15/03 09:08 a		2.0 G	LSC4
Batch: 3062565	PU241_IE_LSC				Work Order: FJHPC1AD	Report DB ID: FJHPC1DX						
PU-241	9.04E-01		2.9E-01	3.4E-01	6.51E-01 3.13E-01	pCi/g 1.50E+01	127.40%	(1.4) (5.2)	3/15/03 12:32 p		2.0 G	LSC4
Batch: 3024349	906.0_H3_LSC				Work Order: FGLVA1AA	Report DB ID: FGLVA1AB						
H-3	-3.86E-02	U	1.1E-01	1.2E-01	2.86E-01 1.32E-01	pCi/g 4.00E+02	100.00%	-0.13 -0.64	1/29/03 08:01 a		10.0 G	LSC6
Batch: 3024348	GAMMA_GS				Work Order: FGLT81AA	Report DB ID: FGLT81AX						
BA-133	4.43E-03	U	1.2E-02	1.2E-02	1.71E-02	pCi/g		0.26 0.75	2/3/03 05:15 p		348.0 g	GER2\$1
CO-60	-5.91E-03	U	7.7E-03	7.7E-03	1.27E-02	pCi/g		-0.46 5.00E-02 -(1.5)	2/3/03 05:15 p		348.0 g	GER2\$1
CS-137	2.52E-03	U	8.2E-03	8.2E-03	1.44E-02	pCi/g		0.18 1.00E-01 0.62	2/3/03 05:15 p		348.0 g	GER2\$1

FORM II
BLANK RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Matrix: SOIL

Report No. : 21956

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD A,	Rpt Unit, CRDL	Yield	Rst/MDC, Rst/TotUcert	Analysis, Prep Date	Total Sa Size	Aliquot Size	Primary Detector
EU-152	-6.83E-03	U	2.5E-02	2.5E-02	3.96E-02	pCi/g		-0.17	2/3/03 05:15 p		348.0	GER2\$1
						1.00E-01		-0.55			g	
EU-154	-1.50E-02	U	2.2E-02	2.2E-02	3.61E-02	pCi/g		-0.41	2/3/03 05:15 p		348.0	GER2\$1
						1.00E-01		-(1.4)			g	
EU-155	-2.15E-02	U	3.1E-02	3.1E-02	5.10E-02	pCi/g		-0.42	2/3/03 05:15 p		348.0	GER2\$1
						1.00E-01		-(1.4)			g	
<hr/>												
Batch: 3024346	SRTOT_SEP_PRECIP_GPC			Work Order: FGLT71AA			Report DB ID: FGLT71AB					
STRONTIUM	-1.75E-02	U	5.2E-02	5.2E-02	1.31E-01	pCi/g	77.30%	-0.13	2/1/03 07:41 p		6.0	GPC32A
					6.05E-02			-0.67			G	

No. of Results: 20

Comments:

STL Richland

rptSTLRchBlank
V3.99 A97

MDC|MDA,Lc - Detection, Decision Level based on instrument background or blank, adjusted by the sample Efficiency, Yield, and Volume.

U Qual - Analyzed for, but the result is less than the Mdc/Mda|Total Uncert or gamma scan software did not identify the nuclide.

FORM II

LCS RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Matrix: SOIL

Report No. : 21956

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3024338	EPA7196					Work Order: FGLR31AC					Report DB ID: FGLR31AS		
HEXCHROME	4.00E+01			0.0E+00	8.00E-02	mg/kg	N/A	4.35E+01		91.88%	2/3/03	2.5	
							Rec Limits:	80	120	-0.1		G	
Batch: 3024350	C14_LSC					Work Order: FGLVD1AC					Report DB ID: FGLVD1CS		
C-14	7.15E+00		2.9E-01	3.9E-01	3.21E-01	pCi/g	100.00%	7.23E+00	2.3E-01	99.00%	1/29/03 03:35 a	5.0	LSC6
							Rec Limits:	70	130	0.0		G	
Batch: 3024342	PUISO_PLATE_AEA					Work Order: FGLTC1AC					Report DB ID: FGLTC1CS		
PU239/40	4.09E+00		8.4E-01	1.5E+00	1.18E-01	pCi/g	7.58%	3.44E+00	1.7E-01	118.97%	2/7/03 04:21 p	2.0	ALP130
							Rec Limits:	70	130	0.2		G	
Batch: 3024343	AMCMISO_EIE_PLT_AEA					Work Order: FGLTF1AC					Report DB ID: FGLTF1CS		
AM-241	4.99E+00		3.1E-01	9.2E-01	1.32E-02	pCi/g	85.39%	4.51E+00	1.5E-01	110.57%	2/11/03 09:44 a	2.0	ALP130
							Rec Limits:	70	130	0.1		G	
Batch: 3024344	UIISO_IE_PLATE_AEA					Work Order: FGLTK1AC					Report DB ID: FGLTK1CS		
U-234	3.06E+00		2.7E-01	6.4E-01	3.81E-02	pCi/g	93.76%	3.34E+00	2.1E-02	91.51%	2/10/03 02:27 p	1.0	ALP8
							Rec Limits:	20	105	-0.1		G	
U-238	3.44E+00		2.9E-01	7.1E-01	3.81E-02	pCi/g	93.76%	3.50E+00	2.2E-02	98.25%	2/10/03 02:27 p	1.0	ALP8
							Rec Limits:	20	105	0.0		G	
Batch: 3051473	NI59_GS					Work Order: FH0WV1AC					Report DB ID: FH0WV1CS		
NI-59	4.24E+02			4.8E+01	8.77E+00	pCi/g	65.18%	3.75E+02	1.2E+01	113.10%	2/28/03 09:37 p	1.0	LEP2\$1
							Rec Limits:			0.1		g	
Batch: 3024345	NI63LSC					Work Order: FGLTP1AC					Report DB ID: FGLTP1CS		
NI-63	4.86E+02		9.1E+00	4.4E+01	7.47E+00	pCi/g	82.70%	5.06E+02	1.7E+01	96.05%	2/7/03 02:06 p	0.25	LSC4
							Rec Limits:	70	130	0.0		G	

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.99 A97

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FORM II **LCS RESULTS**

Date: 19-Mar-03

Lab Name: STL Richland
Matrix: SOIL

SDG: W03954
Report No. : 21956

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3062565	PU241_IE_LSC					Work Order: FJHPC1AC		Report DB ID: FJHPC1CS					
PU-241	1.67E+01		8.5E-01	1.4E+00	1.12E+00	pCi/g	74.60%	2.29E+01	1.0E+00	73.02%	3/15/03 10:50 a	2.0	LSC4
							Rec Limits:	70	130	-0.3		G	
Batch: 3062565	PU241_IE_LSC					Work Order: FJHPC1AE		Report DB ID: FJHPC1EM					
PU-241	1.87E+01		1.0E+00	1.6E+00	1.35E+00	pCi/g	61.50%	2.29E+01	1.0E+00	81.92%	3/15/03 02:14 p	2.0	LSC4
							Rec Limits:	70	130	-0.2		G	
Batch: 3024349	906.0_H3_LSC					Work Order: FGLVA1AC		Report DB ID: FGLVA1CS					
H-3	1.32E+00		1.9E-01	1.9E-01	2.92E-01	pCi/g	100.00%	1.37E+00	4.7E-02	96.73%	1/29/03 08:43 a	10.0	LSC6
							Rec Limits:	70	130	0.0		G	
Batch: 3024348	GAMMA_GS					Work Order: FGLT81AC		Report DB ID: FGLT81CM					
CS-137	2.75E-01		5.0E-02	5.0E-02	3.76E-02	pCi/g		2.88E-01	1.3E-02	95.36%	2/3/03 05:16 p	200.01	GER6\$1
							Rec Limits:	70	130	0.0		g	
K-40	1.87E+01		2.5E+00	2.5E+00	3.03E-01	pCi/g		1.95E+01	1.9E+00	95.83%	2/3/03 05:16 p	200.01	GER6\$1
							Rec Limits:	70	130	0.0		g	
RA-226	1.05E+00		1.6E-01	1.6E-01	6.21E-02	pCi/g		1.15E+00	5.2E-02	91.49%	2/3/03 05:16 p	200.01	GER6\$1
							Rec Limits:	70	130	-0.1		g	
RA-228	2.06E+00		3.1E-01	3.1E-01	1.21E-01	pCi/g		1.87E+00	9.6E-02	109.83%	2/3/03 05:16 p	200.01	GER6\$1
							Rec Limits:	70	130	0.1		g	
U-238DHP	7.08E-01	U	8.4E-01	8.4E-01	8.75E-01	pCi/g		1.05E+00	5.4E-02	67.38%	2/3/03 05:16 p	200.01	GER6\$1
							Rec Limits:	70	130	-0.3		g	
Batch: 3024346	SRTOT_SEP_PRECIP_GPC					Work Order: FGLT71AC		Report DB ID: FGLT71CS					
STRONTIUM	1.10E+00		1.3E-01	3.2E-01	1.26E-01	pCi/g	78.60%	1.14E+00	2.2E-02	95.75%	2/1/03 07:41 p	6.0	GPC32B
							Rec Limits:	20	105	0.0		G	

FORM II
LCS RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Matrix: SOIL

Report No. : 21956

Parameter	Result	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD	Report Unit	Yield	Expected	Expected Uncert	Recovery, Bias	Analysis, Prep Date	Aliquot Size	Primary Detector
No. of Results: 17		Comments:											

STL Richland Bias - (Result/Expected)-1 as defined by ANSI N13.30.

rptSTLRchLcs
V3.99 A97

FORM II
MATRIX SPIKE RESULTS

Date: 19-Mar-03

Lab Name: STL Richland

SDG: W03954

Lot-Sample No.: J3A220291-1

Report No. : 21956

Matrix: SOIL

Parameter	SpikeResult, Orig Rst	Qual	Count Error (2 s)	Total Uncert(2 s)	MDC MD	Rpt Unit, CRDL	Yield	Rec- overy	Exp- ected	Exp Uncert	Analysis, Prep Date	Aliquot Size	Primary Detector
Batch: 3024338	EPA7196				Work Order: FGHGQ1AM	Report DB ID: FGHGQ1MW	Orig Sa DB ID: 9FGHGQ10						
HEXCHROME	2.67E+01			0.0E+00	8.00E-02	mg/kg	N/A	61.76%	4.32E+01		2/3/03	2.5	
	3.50E-01	RPD	194.8									G	
HEXCHROME	4.18E+01			0.0E+00	8.00E-02	mg/kg	N/A	95.95%	4.35E+01		2/3/03	2.5	
	3.50E-01	RPD	196.7									G	
No. of Results: 2	Comments:												

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: 13A220291 P
Client ID: BH2
Due Date: 2/11/03
QC Batch Number: 3029343
Method Test Parameter: SK Am
Matrix: Soil
SDG Number: W03904

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

_____First Level Review: Pam AndersonDate: 2-11-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3024343

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Bhambhani Date: 2/12/03

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: 13A220291 P
Client ID: BHI
Due Date: 2/12/03
QC Batch Number: 3021342
Method Test Parameter: Soil
Matrix: Soil
SDG Number: W03504

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?		✓	
2. Is the LCS result, yield and MDA within contract limits?		✓	
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: QC fails low yield CRDL still met
107283

First Level Review: Pam Anderson

Date: 2-10-03

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3024342

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?		✓	
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?		✓	
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: Note low yield of QC.

Second Level Review: snb Date: 2/12/03

Clouseau Nonconformance Memo

SEVERN
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SERVICES

NCM #: **J07283**
NCM Initiated By: Pam Anderson
Date Opened: 02/11/03
Date Closed: N/A

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Environmental - Sep
Tests: Pulso by ALP
Lot #'s (Sample #'s): J3A220291 (1,2); J3A240000 (342)
QC Batch: 3024342

Nonconformance: Tracer yield out of limits
Subcategory: Unknown

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	02/11/03	QC yields between 8% and 12%. Sample yields OK. LCS recoveries OK and CRDLs met. Client contacted. They will accept.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	02/11/03	Note in case narrative.

Approval History

<u>Name</u>	<u>Date Approved:</u>	<u>Position</u>
Pam Anderson	02/11/03	Group Leader

Gillespie, Barbara

From: Giroir, Bev
Sent: Tuesday, February 11, 2003 3:27 PM
To: Gillespie, Barbara
Cc: Kessner, Joan H
Subject: FW: W03904 (Really W03954)

Barb, Joan and Rich have decided to report the data as is with the problem noted in the case narrative.

Beverly I Giroir
Project Manager
STL Richland
509-375-3131

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-----Original Message-----

From: Kessner, Joan H [mailto:JHKessne@mail.bhi-erc.com]
Sent: Tuesday, February 11, 2003 12:52 PM
To: Giroir, Bev
Subject: RE: W03904

Bev--

Sorry this is taking so long.....

Rich has wandered off to a meeting and I keep missing him.

He will be meeting with me later this afternoon on another topic, but I promise we will deal with this first!! Joan

-----Original Message-----

From: BGiroir@stl-inc.com [mailto:BGiroir@stl-inc.com]
Sent: Tuesday, February 11, 2003 7:10 AM
To: JHKessne@mail.bhi-erc.com
Cc: BGillespie@stl-inc.com
Subject: W03904

Joan, Good morning!!!!

The subject W0 has low Pu tracer yields. Here's the stats:

Samples J00FB6 and J00FB7 from W03904 have low tracer yields of 35.3%, 75% and duplicate of 57.6%. The sample results are non-detects, below the MDC of ~0.02 pCi/g. The batch process blank has a tracer yield of 12.3% with an MDC of 0.07 pCi/g, result less than MDC. The matrix blank is a 10% tracer yield with an MDC of 0.092 pCi/g with a result less than MDC. The matrix spike had a tracer yield of 8.1%, recovery of 102%, MDC of 0.112. The LCS has a tracer recovery of 7.6%, recovery of 119% and an MDC of 0.118 pCi/g.

This SDG is due tomorrow, 2/12/03. Will you please provide direction as to
a) reporting the data or b) reanalyzing the samples. If reanalysis is chosen, please
provide needed report date.

Hey thanks for the info, Bev

Beverly I Giroir
Project Manager
STL Richland
509-375-3131

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please notify us immediately by telephone at 509-375-3131.

Gillespie, Barbara

From: Gillespie, Barbara
Sent: Monday, February 10, 2003 5:18 PM
To: Giroir, Bev
Subject: BHI SDG W03904

Bev,

Pam gave me a Pu-iso data package that has some really low tracer yields for the subject SDG. This SDG is due to the client 2/12/03. Please ask the client if we can report this data or if we need to reanalyze.

The samples are J00FB6 and J00FB7. Their results are non-detects below the MDC of ~0.02 pCi/g. The sample yields are 35.3%, 75%, duplicate at 57.6%. The batch process blank has a tracer yield of 12.3% with an MDC of 0.07 pCi/g, result less than MDC. The matrix blank is a 10% tracer yield with an MDC of 0.092 pCi/g with a result less than MDC. The matrix spike had a tracer yield of 8.1%, recovery of 102%, MDC of 0.112. The LCS has a tracer recovery of 7.6%, recovery of 119% and an MDC of 0.118 pCi/g.

Please ask for direction.

Barbara Gillespie
Project and Client Services
STL Richland
2800 George Washington Way
Richland, WA 99352
(509)375-3131
(509)375-5590
bgillespie@stl-inc.com

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Data Review Checklist
RADIOCHEMISTRY
First Level Review

P

Lot Number: 13A22291
Client ID: BH2
Due Date: 2/12/03
QC Batch Number: 3060564
Method Test Parameter: SOPu
Matrix: Soil
SDG Number: 403954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓	✓	
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: Blank yield high. Will accept data.
Will not transfer this as it is only for Pu 241 yields
507486

First Level Review: Pam AndersonDate: 3-12-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number:

3062564

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓	✓	
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response:

Second Level Review:

John M. Smith

Date:

3/13/03

Clouseau Nonconformance Memo

SEVERN

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SERVICES

NCM #: **J07486**
NCM Initiated By: Pam Anderson
Date Opened: 03/13/03
Date Closed: N/A

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: **Environmental - Sep**
Tests: **Pulso by ALP**
Lot #'s (Sample #'s): **J3A220291 (1,2); J3C030000 (564)**
QC Batch: **3062564**

Nonconformance: **Tracer yield out of limits**
Subcategory: **Unknown**

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Pam Anderson	03/13/03	These batches were run only to get yields for Pu 241 results. The first batch, 3051471, had a sample yield failure. The second batch has high blank yields. We will use the recoveries of the second batch to calculate Pu 241 yields.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Pam Anderson	03/13/03	Note in case narrative.

Approval History

<u>Name</u>	<u>Date Approved:</u>	<u>Position</u>
Pam Anderson	03/13/03	Group Leader

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: B3A020291 P
Client ID: BHE
Due Date: 2/12/03
QC Batch Number: 3024344
Method Test Parameter: SR4 480
Matrix: SR4
SDG Number: 203954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

First Level Review: Pam Anderson Date: 2-11-03

Data Review Checklist
RADIOCHEMISTRY
Second Level ReviewQC Batch Number: 3024344

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: RebeccaDate: 2/12/03

Lot Number: J3A 220291

Client ID: BHI

Due Date: 2-12-03

OC Batch Number: 3051473

Method Test Parameter: N1-59 LE PD

Matrix: SOL

SDG Number: W03954

Comments on any "No" response:

First Level Review:

Date: 3-5-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3051473

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Bhambhani

Date: 3/6/03

Data-Review Checklist
RADIOCHEMISTRY
First Level ReviewLot Number: J3A220291Client ID: BH±Due Date: 2-12-03QC Batch Number: 3024348Method Test Parameter: GammaMatrix: SoilSDG Number: W03954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓	✓	
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓	✓	
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?			✓
E. Other			
1. Are all Nonconformances included and noted? <u>J07240</u>	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

First Level Review: MAH. P. J.Date: 2-5-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3024348

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: Brian Dillman

Date: 2/5/03

Clouseau Nonconformance Memo

SEVERN
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SERVICES

NCM #: **J07240**
NCM Initiated By: Dale OConnell
Date Opened: 02/05/03
Date Closed: N/A

Classification: **Anomaly**
Status: **PMREVIEW**
Production Area: Counting
Tests: Gamma by GER
Lot #'s (Sample #'s): J3A220291 (1,2); J3A240000 (348)
QC Batch: 3024348

Nonconformance: Batch Result Out of Limits
Subcategory: LCS result outside acceptance limits

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Dale OConnell	02/05/03	Client requested U-238DHP at lower abundance, therefore erratic recoveries and higher MDA. Insufficient sample to generate a duplicate.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Dale OConnell	02/05/03	Report results with recoveries achieved. Precision determination achieved by recounting sample on a different detector. Report results.

Approval History

<u>Name</u>	<u>Date Approved:</u>	<u>Position</u>
Dale OConnell	02/05/03	Group Leader

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3A220291
 Client ID: BH I
 Due Date: 2/12/2003
 QC Batch Number: 3024346
 Method Test Parameter: TH TOTAL STRONTIUM
 Matrix: SOIL
 SDG Number: W63954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?	✓		
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

First Level Review: Pavel Anderson Date: 2-4-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 30243 46

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: _____

Brian M. Sullivan

Date: 2/6/03

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3A 220 291
 Client ID: BHT
 Due Date: 2/12/2003
 QC Batch Number: 3024350
 Method Test Parameter: S3 CARBON 14
 Matrix: SOTL
 SDG Number: 603954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

First Level Review: Pam Anderson

Date: 2-5-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number:

3024350

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			✓
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			✓
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review:

B. M. Bileys

Date:

2/4/03

P

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3A 220291
 Client ID: BHI
 Due Date: 2/12/2003
 QC Batch Number: 302 4345
 Method Test Parameter: 34 NICKEL-63
 Matrix: SOIL
 SDG Number: W03954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?	✓		
4. Were spectra reviewed/meet contractual requirements?	✓		
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?			✓
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

First Level Review: _____ Date: _____

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3024345

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓		
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: 32 mdy Date: 2/20/03

SEVERN TRENT STL

Data Review Checklist RADIOCHEMISTRY First Level Review

Lot Number: 13A220291 P
 Client ID: BH2
 Due Date: 3/14/03 2/12/03
 QC Batch Number: 3062565
 Method Test Parameter: SP-10241
 Matrix: SOIL
 SDG Number: W03954

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?	✓		
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	PA 3-17-03 ✓	✓	
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?	✓		✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?	✓		
4. Were spectra reviewed/meet contractual requirements?	✓		✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: Blank yields high NCM on the basis

First Level Review: Pam Anderson

Date: 3-17-03

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 3062565

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	✓	✓	
2. Is the sample Minimum Detectable Activity \leq the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result \leq the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result $<$ the Contract Detection Limit?	✓		
4. Is the blank result $>$ the Contract Detection Limit but the sample result $<$ the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity \leq the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: sh mdy Date: 3/12/03

Data Review Checklist
RADIOCHEMISTRY
First Level Review

Lot Number: J3A220291
Client ID: BHT
Due Date: 2/12/2003
QC Batch Number: 3024349
Method Test Parameter: SG TRITIUM
Matrix: SOIL
SDG Number: W03959

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. COC			
1. Is the ICOC page complete (includes all applicable analysts, dates, SOP numbers and revisions)?	✓		
B. QC Batch			
1. Do the Summary/Detailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	✓		
2. Are the QC appropriate for the analysis included in the batch?	✓		
3. Is the Analytical Batch Worksheets complete (includes, as appropriate, volumes, count times, etc.)?	✓		
4. Does the Worksheets include a Tracer Vial label for each sample?			✓
C. QC & Samples			
1. Is the blank result, yield and MDA within contract limits?	✓		
2. Is the LCS result, yield and MDA within contract limits?	✓		
3. Are the MS/MSD results, yields and MDAs within contract limits?			✓
4. Are the duplicate results, yields and MDAs within contract limits?	✓		
5. Are the sample yields and MDAs within contract limits?	✓		
D. Raw Data			
1. Were results calculated in the correct units?	✓		
2. Were analysis volumes entered correctly?	✓		
3. Were yields entered correctly?			✓
4. Were spectra reviewed/meet contractual requirements?			✓
5. Were raw counts reviewed for anomalies?	✓		
E. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Are worksheet entries complete and correct?	✓		

Comments on any "No" response: _____

First Level Review: Pam Anderson

Date: 2-3-03



STL

Data Review Checklist
RADIOCHEMISTRY
Second Level Review

QC Batch Number: 30243 49

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?	✓		
3. Are the correct isotopes reported?	✓		
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?	✓		
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?	✓		
8. Do the MS/MSD results and yields meet acceptance criteria?			✓
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?			✓
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response: _____

Second Level Review: _____

Adam M. Bign...

Date: 2/4/03

SEVERN TRENT SERVICES

Richland Laboratory Data Review Check List METALS

<u>Work Order Number(s):</u> WO 3954				
<u>Lab Sample Numbers or SDG:</u> FGH6Q, FGH6V Batch# 3024338				
<u>Method/Test/Parameter:</u> Hexavalent Chromium RICHWC 3005 RL6				
Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
A. Initial Calibration				
1. Performed at required frequency with required number of levels?	✓			✓
2. Correlation coefficient within QC limits?	✓			✓
3. Initial calibration verification (ICV) analyzed immediately after calibration and results within QC limits?	✓			✓
4. Initial calibration blank(ICB) analyzed immediately after ICV and concentrations of all parameters ≤ reporting limit?	✓			✓
B. Continuing Calibration				
1. CCV analyzed at required frequency and all parameters within QC limits?	✓			✓
2. CCB analyzed at required frequency and all results ≤ reporting limit?	✓			✓
C. Sample Analysis				
1. Were any samples with concentrations above the linear range for any parameter diluted and reanalyzed?		✓		✓
2. Were all sample holding times met?	✓			✓
D. QC Samples				
1. All results for the preparation blank below limits?	✓			✓
2. MS or MS/MSD recoveries within QC limits and %RPD (for MSD) acceptable?		✓		✓
3. LCS percent recovery within QC limits and %RPD (for LCSD) acceptable?	✓			✓
4. Analytical spikes within QC limits where applicable?		✓		✓
5. ICP only: One serial dilution performed per SDG?			✓	✓
6. ICP only: CRDL standard (CRI or CRA) analyzed at required frequency?			✓	✓
7. ICP only: Interference check samples (ICSA, ICSAB) and HICAL analyzed at the required frequencies and within QC limits?			✓	✓

Review Item	Yes (✓)	No (✓)	N/A (✓)	2 nd Level Review (✓)
E. Other				
1. Are all nonconformances included and noted? JO 7332	✓			✓
2. Is the correct date and time of analysis shown?	✓			✓
3. Did the analyst sign and date the front page of the analytical run?	✓			✓
4. Correct methodology used?	✓			✓
5. Transcriptions checked?	✓			✓
6. Calculations checked at minimum frequency?	✓			✓
7. Units checked?	✓			✓

Comments on any "No" response:

Pass 2-7-03 MS was 61%
Post Digestion Spike was 96%

Analyst: C. J. [Signature]

Date: 2-7-03

Second-Level Review: [Signature]

Date: 2-19-03

Data Review Checklist
~~RADIO~~CHEMISTRY
Second Level Review

QC Batch Number:

3024338

Review Item	Yes (✓)	No (✓)	N/A (✓)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			✓
2. Is the sample Minimum Detectable Activity < the Contract Detection Limit?			✓
3. Are the correct isotopes reported?			✓
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the Contract Detection Limit?			✓
2. Does the blank result meet the Contract criteria?	✓		
3. Is the blank result < the Contract Detection Limit?	✓		
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			✓
5. Is the LCS recovery with contract acceptance criteria?	✓		AmB
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection Limit?			✓
8. Do the MS/MSD results and yields meet acceptance criteria?	✓		
9. Do the duplicate sample results and yields meet acceptance criteria?	✓		
C. Other			
1. Are all Nonconformances included and noted?	✓		
2. Are all required forms filled out?	✓		
3. Was the correct methodology used?	✓		
4. Was transcription checked?	✓		
5. Were all calculations checked at a minimum frequency?	✓		
6. Were units checked?	✓		

Comments on any "No" response:

Second Level Review:

B. M. B. B.

Date:

2/20/03

Clouseau Nonconformance Memo

SEVERN
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SERVICES

NCM #: J07332	Classification: Anomaly
NCM Initiated By: Dale OConnell	Status: PMREVIEW
Date Opened: 02/19/03	Production Area: Classical Chemistry
Date Closed: N/A	Tests: 7196A
	Lot #'s (Sample #'s): J3A220291 (1,2)
	QC Batch: 3024338
Nonconformance: Batch Result Out of Limits	
Subcategory: MS/MSD result outside acceptance limits	

Problem Description / Root Cause

<u>Name</u>	<u>Date</u>	<u>Description</u>
Dale OConnell	02/19/03	Cause: Matrix effect.

Corrective Action

<u>Name</u>	<u>Date</u>	<u>Corrective Action</u>
Dale OConnell	02/19/03	Post-digestion spike within limits, report results

Approval History

<u>Name</u>	<u>Date Approved:</u>	<u>Position</u>
Dale OConnell	02/19/03	Group Leader

CHAIN OF CUSTODY

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B02-030-038		Page 1 of 1	
Collector Stankovich / Mitchell		Company Contact Rikki Thoren/Mike Stankovich		Telephone No. 521-8003		Project Coordinator TRENT, SJ		Price Code 8L Data Turnaround 21 Days	
Project Designation 105-F Rx Phase IV Soils (Side-slope, overburden, under & ad)		Sampling Location 105F - Shallow Zone		SAF No. B02-030		Air Quality <input type="checkbox"/>			
Ice Chest No. ERC 97-079		Field Logbook No. EL-1535-8		COA F2 R105FX200C <i>THM 1-22-03</i>		Method of Shipment Federal Express <i>RE 1-22-03</i> Government Vehicle			
Shipped To Sewern Trent Incorporated, Richland		Offsite Property No. NA		Bill of Lading/Air Bill No. NA					
POSSIBLE SAMPLE HAZARDS/REMARKS <i>Radioactive</i> <i>Tie To B121R5</i> Special Handling and/or Storage <i>cool 4°C</i>			Preservation		None	Cool 4C	None	Cool 4C	
			Type of Container		G/P	G	G	nG	
			No. of Container(s)		1	1	1		
			Volume		1000g	125g	500g	250g	
SAMPLE ANALYSIS <i>SD6</i> <i>W03954</i> <i>Due 2-12</i> <i>U3A220291</i>			See item (1) in Special Instructions.		Chromium Hex - 7196	See item (2) in Special Instructions.	PCBs - 8082		
Sample No.	Matrix *	Sample Date	Sample Time						
J00FB7 <i>RLBQ</i>	SOIL	01-21-03	0825	<i>✓</i>	<i>✓</i>	<i>✓</i>	<i>✓</i>		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix * S=Soil SE=Sediment SO=Solid SL=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Thane W1=Wipe L=Liquid V=Vegetation X=Other	
Relinquished By/Removed From <i>M. Stankovich</i> 1-21-3		Date/Time 1430		Received By/Stored In <i>3B/3725</i> 1-21-3		Date/Time 1430			
Relinquished By/Removed From <i>3B</i> 3728		Date/Time 1-22-03 1500		Received By/Stored In <i>R. Feltz</i> 1-22-03		Date/Time 1500			
Relinquished By/Removed From <i>RF</i> 001 <i>P. Feltz</i>		Date/Time 1-22-03 1515		Received By/Stored In <i>SR 2150</i> 1-22-03		Date/Time 1515			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time				Relinquished By/Removed From Date/Time Received By/Stored In Date/Time					
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time				Relinquished By/Removed From Date/Time Received By/Stored In Date/Time					
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time				Relinquished By/Removed From Date/Time Received By/Stored In Date/Time					
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B02-030-037		Page 1 of 1		
Collector Stankovich / <u>Mitchell</u>		Company Contact Rikki Thoren/Mike Stankovich		Telephone No. 521-8003		Project Coordinator TRENT, SJ		Price Code 8L Data Turnaround 21 Days		
Project Designation 105-F Rx Phase IV Soils (Side-slope, overburden, under & ad)		Sampling Location 105F -Overburden Zone		SAF No. B02-030		Air Quality <input type="checkbox"/>				
Ice Chest No. <u>ERC 97-029</u>		Field Logbook No. EL-1535-8		COA <u>EL 1535-8</u> R105FX200C		Method of Shipment <u>Government Vehicle</u>				
Shipped To Severn Trent Incorporated, Richland		Offsite Property No. <u>NA</u>		Bill of Lading/Air Bill No. <u>NA</u>						
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive <u>Tic To B121R5</u> Special Handling and/or Storage <u>COOL 4°C</u>				Preservation		None	Cool 4C	None	Cool 4C	
				Type of Container		G/P	G	G	G	
				No. of Container(s)		1	1	1	1	
				Volume		1000g	125g	500g	250g	
				SAMPLE ANALYSIS		See item (1) in Special Instructions.	Chromium Hex - 7196	See item (2) in Special Instructions.	CBs - 8082	
Sample No.	Matrix *	Sample Date	Sample Time							
J00FB6 <u>FLHGV</u>	SOIL	1-21-3	0830	✓	✓	✓	✓			
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *		
Relinquished By/Removed From <u>M. Mitchell</u>		Date/Time <u>1-21-3 1430</u>		Received By/Stored In <u>373728</u>		Date/Time <u>1-21-3 1430</u>		(1) Americium-241; Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-B3); Tritium - H3; Carbon-14; Nickel-59; Nickel-63; Isotopic Plutonium; Plutonium-241; Strontium-89,90 - Total Sr; Uranium - Isotopic (Complete) (Uranium-234, Uranium-235, Uranium-238) (2) Mercury - 7471 - (CV); ICP Metals - 6010A (Add-on) (Lead); ICP Metals - 6010A (TAL) (Barium) Personnel not available to relinquish samples from the 373728 Ref # <u>373</u> on <u>1/22/03</u>		
Relinquished By/Removed From <u>373728</u>		Date/Time <u>1-22-03 1500</u>		Received By/Stored In <u>25000</u>		Date/Time <u>1-22-03 1500</u>				
Relinquished By/Removed From <u>ERC</u>		Date/Time <u>1-22-03 1515</u>		Received By/Stored In <u>A. Rhineheart</u>		Date/Time <u>1-22-03</u>				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time				
LABORATORY SECTION		Received By		Title		Date/Time				
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time				

36-inch plume**ERC Radiological Counting Facility Analysis Report**RCF Number RCF9298Sample Date & Time 5/16/01 1245Project ID: 100-F-19SAF Number: B00-029Date Analyzed 5/18/01 10:41:Sample ID: B121R5**Gamma Energy Analysis**

Nuclide	Activity (pCi/g)		Error (pCi/g)	MDC (pCi/g)
K-40	2.1E+01	+/-	2.5E+00	4.0E-01
Co-60	4.6E-02	+/-	1.5E-02	4.3E-02
Cs-137	5.4E-02	+/-	1.8E-02	2.6E-02
Eu-152	3.0E-01	+/-	6.2E-02	1.2E-01
Eu-154	< 1.3E-01			1.3E-01
Eu-155	< 1.4E-01			1.4E-01
Am-241	< 8.9E-02			8.9E-02

Total GEA (pCi/g)	2.2E+01	+/-	2.6E+00
-------------------	---------	-----	---------

	Activity (pCi/g)		Error (pCi/g)
Gross Alpha**	N/R	+/-	N/R
Gross Beta	N/R	+/-	N/R

Definitions:

All errors reported at 2 standard deviations.

N/R = no result or analysis not requested. <MDA = Less than detection limit.

All GEA results reported as "<" list the Minimum Detectable Concentration (MDC) value for that radionuclide.

Rounding error may result in the reported total GEA activity differing from the sum of the > MDA GEA values in the second significant digit.

For soils and natural samples, the following applies:

The analysis of U-238 is based on the activity of Pa-234m.

The analysis of Np-237 is based on the activity of Pa-233.

U-238da is the activity of Pb-214 and Bi-214, short lived daughter products of U-238. Equilibrium between parent and daughter products probably does not exist in disturbed materials.

Th-232da is the activity of Ac-228, Pb-212, and Tl-208, short lived daughter products of Th-232. Equilibrium between parent and daughter products may not exist in disturbed materials.

Other samples, not containing natural materials, may have inapplicable results for the Th, U, transuranics and daughter products. The results must then be balanced for the gross alpha analysis.

**The gross alpha results are not corrected for mass absorption

No peaks for this radionuclide were visible above background in the spectrum. The result was reported as less than MDC.

Analyst

C. W. Landis
C. W. Landis5/18/01

Report To

Mike Stankovich

Joan Kesner

Fax

521-8001

372-9487

Report Printed: Friday, May 18, 2001

Sample Check-in List

Date/Time Received: 1/22/03 @ 15:15
 Client: BHI SDG #: W03954 NA ☐ SAF #: B02-030 NA ☐
 Work Order Number: 03A220291 Chain of Custody # B02-030-037-038
 Shipping Container ID: ERC-97079 Air Bill # N/A

1. Custody Seals on shipping container intact? NA ☐ Yes ☒ No ☐
2. Custody Seals dated and signed? NA ☐ Yes ☒ No ☐
3. Chain of Custody record present? Yes ☒ No ☐
4. Cooler temperature: 4°C NA ☐ 5. Vermiculite/packing materials is NA ☐ Wet ☐ Dry ☒
6. Number of samples in shipping container: 4
7. Sample holding times exceeded? NA ☒ Yes ☐ No ☐
8. Samples have:
☒ tape ☒ hazard labels
☒ custody seals ☒ appropriate samples labels
9. Samples are:
☒ in good condition ☐ leaking
☐ broken ☐ have air bubbles
 (Only for samples requiring head space)
10. Sample pH taken? NA ☒ pH < 2 ☐ pH > 2 ☐
11. Sample Location, Sample Collector Listed? * Yes ☒ No ☐
 *For documentation only. No corrective action needed.
12. Were any anomalies identified in sample receipt? Yes ☐ No ☒
13. Description of anomalies (include sample numbers): _____

Sample Custodian: [Signature] Date: 1/22/03

Client Sample ID	Analysis Requested	Condition	Comments/Action

Client Informed on _____ by _____ Person contacted _____

[] No action necessary; process as is.

Project Manager _____ Date _____

2/1/03 12:35:23 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)

Pipet #: *NA*

Report Due: 02/12/2003

W03954

SX Americium-241 by Alpha Spec

5I CLIENT: HANFORD

PRIORITYSep1 DT/Tm Tech: *NA*

Batch: 3024343

SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech: *NA*

SEQ Batch, Test: 3024342, 6ISO 3024342, 6ISO

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AG J3A220291-1-SAMP	2.05g,in		AMTC1510 12/05/02 11/15/02 _r		200			
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGQ-1-AR-X J3A220291-1-DUP	2.0g,in		AMTC1511 12/05/02 11/15/02 _r					
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
3 FGHGV-1-AG J3A220291-2-SAMP	2.01g,in		AMTC1512 12/05/02 11/15/02 _r					
01/21/2003 08:30	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FGLTF-1-AA-B J3A240000-343-BLK	2.0g,in		AMTC1513 12/05/02 11/15/02 _r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
5 FGLTF-1-AC-C J3A240000-343-LCS	2.0g,in		AMSJ0168 01/31/03 11/15/02 _r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
6 FGLTF-1-AD-BX J3A240000-343-MBLK	1.99g,in		AMTC1514 12/05/02 11/15/02 _r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
7 FGLTF-1-AE-CM J3A240000-343-MLCS	2.01g,in		AMSJ0169 01/31/03 11/15/02 _r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:

STL Richland
Richland Wa.Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2
r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7
Prep_SamplePrep v4.6

2/1/03 12:35:24 PM

Sample Preparation/Analysis

Balance Id:1120373922

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)

Pipet #: _____

SX Americium-241 by Alpha Spec

PRIORITY

Report Due: 02/12/2003

5I CLIENT: HANFORD

Sep1 DT/Tm Tech: _____

Batch: 3024343

pCi/g

Sep2 DT/Tm Tech: _____

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot,
Sample Date/TimeTotal
Amt/UnitInitial Aliquot
Amt/UnitQC Tracer
Prep DateQC Vial 2
Prep DateCount
Time MinDetector
IdCount On | Off
(24hr) CircleCR Analyst,
Init/DateComments: Samples were muffled. *in 2-3-03*

Sample 6.1 FGLTF-1-AD BX blew its safety membrane during the pressurization of the microwave, D.O.
per instructed us to continue with it. *in 2-3-03*
Ottawa Sand used for Samples FGLTF-BX & CM. *in 2-3-03*

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHQ1AG-SAMP Constituent List:

Am-241	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
FGLTF1AA-BLK:											
Am-241	RDL:1	pCi/g	LCL:	UCL:	RPD:	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
FGLTF1AC-LCS:											
Am-241	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
FGLTF1AD-MBLK:											
Am-241	RDL:1	pCi/g	LCL:	UCL:	RPD:	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
FGLTF1AE-MLCS:											
Am-241	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	AM-243	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

FGHQ1AG-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTF1AA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTF1AC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTF1AD-MBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTF1AE-MLCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

2/11/03 5:05:36 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/12/03, 2/12/03, Batch: '3024343', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024343				
AC	CalcC	BELSITOB	1/27/03 4:05:17 PM	
SC		WagarR	IsBatched	1/24/03 11:45:35 AM
SC		BELSITOB	InPrep	1/27/03 4:05:17 PM
SC		BELSITOB	Prep1C	1/28/03 2:14:10 PM
SC		WAGNERJ	InPrep2	1/29/03 7:51:10 PM
SC		WAGNERJ	Prep2C	2/3/03 3:52:20 PM
SC		HAMMERL	InSep1	2/4/03 7:46:44 AM
SC		DOWNEYS	Sep2C	2/11/03 6:56:53 AM
SC		BlackCL	InCnt1	2/11/03 7:18:50 AM
SC		BlackCL	CalcC	2/11/03 1:14:11 PM
AC		BELSITOB	1/28/03 2:14:10 PM	ICOC_RADCALC v4.5.3.2
AC		WAGNERJ	1/29/03 7:51:10 PM	RICH-RC-5013 REVISION 4
AC		WAGNERJ	2/3/03 3:52:20 PM	RICH-RC-5013 REVISION 4
AC		HAMMERL	2/4/03 7:46:44 AM	RICH-RC-5019 REVISION 4
AC		DOWNEYS	2/11/03 6:56:53 AM	RICH-RC-5019 REVISION 4
AC		BlackCL	2/11/03 7:18:50 AM	RICH-RC-5080 REVISION 1
AC		BlackCL	2/11/03 1:14:11 PM	RICH-RC-5003 REVISION 4
				RICH-RD-0008 REVISION 2

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

2/1/03 12:33:16 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
5I CLIENT: HANFORD

Pipet #:

Report Due: 02/12/2003 W03954

Priority

Batch: 3024342 SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: 3024343, 6ISX 3024343, 6ISX All Tests: 3024338 DWEA, 3024341 88OV, 3024342 6ISO, 3024343 6ISX, 3024344 7SSR,
3024345 AFS4, 3024346 CHTH, 3024348 AXTA, 3024349 ATS6, 3024350 5SS3,

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AF J3A220291-1-SAMP	2.05g,in		PUTC6814 12/20/02 11/22/02,r		200			
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGQ-1-AQ-X J3A220291-1-DUP	2.0g,in		PUTC6815 12/20/02 11/22/02,r					
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
3 FGHGV-1-AF J3A220291-2-SAMP	2.01g,in		PUTC6816 12/20/02 11/22/02,r					
01/21/2003 08:30	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FGLTC-1-AA-B J3A240000-342-BLK	2.0g,in		PUTC6817 12/20/02 11/22/02,r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
5 FGLTC-1-AC-C J3A240000-342-LCS	2.0g,in		PUSK0517 01/14/03 09/30/02,r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
6 FGLTC-1-AD-BX J3A240000-342-MBLK	1.99g,in		PUTC6818 12/20/02 11/22/02,r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
7 FGLTC-1-AE-CM J3A240000-342-MLCS	2.01g,in		PUSK0518 01/14/03 09/30/02,r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:

2/1/03 12:33:18 PM

Sample Preparation/Analysis

Balance Id:1120373922

6I PuAm PrpRC5013/RC5019, SepRC5080(5003)/RC5010(5039)
 SO Plutonium-238,239/40 by Alpha Spec
 5I CLIENT: HANFORD

Pipet #:

Report Due: 02/12/2003

PRIORITY

Batch: 3024342

pCi/g

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot,
Sample Date/TimeTotal
Amt/UnitInitial Aliquot
Amt/UnitQC Tracer
Prep DateQC Vial 2
Prep DateCount
Time MinDetector
IdCount On | Off
(24hr) CircleCR Analyst,
Init/DateComments: Samples were nuffed. *2-3-03*

Sample 6.) FGLTC-1-AD BX blew it's safety membrane during the pressurization of the microwave, D.O.
 per instructed us to continue with it- *2-3-03*

Ottawa Sand Used for Samples FGLTC-BX & LCM - *2-3-03*

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AF-SAMP Constituent List:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						
FGLTC1AA-BLK:											
PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						
FGLTC1AC-LCS:											
PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
FGLTC1AD-MBLK:											
PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						
FGLTC1AE-MLCS:											
PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

FGHGQ1AF-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTC1AA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTC1AC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTC1AD-MBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLTC1AE-MLCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B



STL

*** RE-ANALYSIS REQUEST ***

DUE DATE 23-03

CUSTOMER BHI

ANALYSIS Pu iso

MATRIX soil

LOT NUMBER J3A 220291

SAMPLE DELIVERY GROUP W03954

OLD BATCH NUMBER 3051471

NEW BATCH NUMBER 3062564

241 = 3062565

LAB SAMPLE ID	REASON FOR REQUEST & ANALYSIS COMMENTS
1) FG-HG-Q1AX	← SA yield factor
2) FG-HG-Q1A0	
3) FG-HG-V1A4	
4)	
5)	
6)	
7)	
8)	
9)	
10)	
11)	
12)	
13)	
14)	
15)	
16)	
17)	
18)	
19)	
20)	
LAB QC ID	Assigned with new batch.

3/5/03 5:25:11 PM

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

Sample Preparation/Analysis

AG Pu/241 PrpRC5013/5019, SepRC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec
SI CLIENT: HANFORD

Balance Id:1120373922

Pipet #: _____

Report Due: 02/12/2003

Sep1 DT/Tm Tech:

Batch: 3062564

SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: 3051472, AGSP 3051472, AGSP 3062565, AGSP 3062565, AGSP

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-2-AX J3A220291-1-SAMP	2.03g,in		PUTD1831 03/05/03 12/20/02 r		200			
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGQ-2-A0-X J3A220291-1-DUP	2.0g,in		PUTD1832 03/05/03 12/20/02 r					
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
3 FGHGV-2-AU J3A220291-2-SAMP	2.0g,in		PUTD1833 03/05/03 12/20/02 r					
01/21/2003 08:30	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FJHN7-1-AA-B J3C030000-564-BLK	2.0g,in		PUTD1834 03/05/03 12/20/02 r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
5 FJHN7-1-AC-C J3C030000-564-LCS	2.0g,in		PUSK0523 01/31/03 09/30/02 r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
6 FJHN7-1-AD-BX J3C030000-564-MBLK	1.98g,in		PUTD1835 03/05/03 12/20/02 r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
7 FJHN7-1-AE-CM J3C030000-564-MLCS	1.97g,in		PUSK0524 01/31/03 09/30/02 r					
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2
Richland Wa. r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7
Prep_SamplePrep v4.6

3/5/03 5:25:15 PM

Sample Preparation/Analysis

Balance Id:1120373922

AG Pu/241 PrpRC5013/5019, SepRC5010(5039)
SO Plutonium-238,239/40 by Alpha Spec**PRIORITY**

Pipet #: _____

Report Due: 02/12/2003

SI CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 3062564

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot,
Sample Date/TimeTotal
Amt/UnitInitial Aliquot
Amt/UnitQC Tracer
Prep DateQC Vial 2
Prep DateCount
Time MinDetector
IdCount On | Off
(24hr) CircleCR Analyst,
Init/DateComments: *Samples were muffled - 2-3-6-03*

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ2AX-SAMP Constituent List:

PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						
FJHN71AA-BLK:											
PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						
FJHN71AC-LCS:											
PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35
FJHN71AD-MBLK:											
PU-238	RDL:1	pCi/g	LCL:	UCL:	RPD:	PU-239	RDL:1	pCi/g	LCL:	UCL:	RPD:
Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35						
FJHN71AE-MLCS:											
PU-239	RDL:1	pCi/g	LCL:70	UCL:130	RPD:35	Pu-242	RDL:	pCi/g	LCL:20	UCL:105	RPD:35

FGHGQ2AX-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHN71AA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHN71AC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHN71AD-MBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHN71AE-MLCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

2/5/03 10:57:24 AM

Sample Preparation/Analysis

Balance Id:1120373922

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.7S Uiso PrpRC5013/RC5019, SepRC5079(5039)
SR Uranium-234,235,238 by Alpha Spec
5I CLIENT: HANFORDPipet #: *NA***PRIORITY**Sep1 DT/Tm Tech: *NA*Report Due: 02/12/2003 *W03954*

Batch: 3024344 SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech: *NA*

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AC J3A220291-1-SAMP	1.04g,in	UITC8685 12/20/02 11/11/02,r			200			
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2					Scr Rst: Alpha: 5.31E+01 pCi/g Beta: 2.02E+01 pCi/g	
2 FGHGQ-1-AT-X J3A220291-1-DUP	1.02g,in	UITC8686 12/20/02 11/11/02,r						
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2					Scr Rst: Alpha: 5.31E+01 pCi/g Beta: 2.02E+01 pCi/g	
3 FGHGV-1-AC J3A220291-2-SAMP	1.01g,in	UITC8687 12/20/02 11/11/02,r						
01/21/2003 08:30	AmtRec: LP,125P	#Containers: 2					Scr Rst: Alpha: 9.02E+01 pCi/g Beta: 3.18E+01 pCi/g	
4 FGLTK-1-AA-B J3A240000-344-BLK	1.0g,in	UITC8688 12/20/02 11/11/02,r						
01/21/2003 08:25	AmtRec:	#Containers: 1					Scr Rst: Alpha: Beta:	
5 FGLTK-1-AC-C J3A240000-344-LCS	1.0g,in	UISH0172 01/10/03 10/05/02,r						
01/21/2003 08:25	AmtRec:	#Containers: 1					Scr Rst: Alpha: Beta:	

Comments:

Samples were muffled. 02-05-03 gsk
Samples were converted 3x w/ Con HCl. 02-05-03 gsk

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AC-SAMP Constituent List:

U-232 RDL: pCi/g LCL:20 UCL:105 RPD:35 U-234 RDL:1 pCi/g LCL: UCL: RPD:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

Richland Wa. *51* r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 5

Prep_SamplePrep v4.6

2/5/03 10:57:25 AM

Sample Preparation/Analysis

Balance Id:1120373922

7S Uiso PrpRC5013/RC5019, SepRC5079(5039)

SR Uranium-234,235,238 by Alpha Spec

PRIORITY

Pipet #:

Report Due: 02/12/2003

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 3024344

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	
U-235 RDL:1	pCi/g	LCL:	UCL:	RPD:	U-238 RDL:1	pCi/g	LCL:	UCL:	RPD:
FGLTK1AA-BLK:									
U-232 RDL:	pCi/g	LCL:20	UCL:105	RPD:35	U-234 RDL:1	pCi/g	LCL:	UCL:	RPD:
U-235 RDL:1	pCi/g	LCL:	UCL:	RPD:	U-238 RDL:1	pCi/g	LCL:	UCL:	RPD:
FGLTK1AC-LCS:									
U-232 RDL:	pCi/g	LCL:20	UCL:105	RPD:35	Uranium RDL:	pCi/g	LCL:70	UCL:130	RPD:35
FGHGQ1AC-SAMP Calc Info:									
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B					
FGLTK1AA-BLK:									
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B					
FGLTK1AC-LCS:									
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B					

2/12/03 8:30:38 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/13/03, 2/13/03, Batch: '3024344', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024344				
AC	CalcC	BELSITOB	1/27/03 4:05:22 PM	
SC		WagarR	IsBatched	1/24/03 11:45:35 AM
SC		BELSITOB	InPrep	1/27/03 4:05:22 PM
SC		BELSITOB	Prep1C	1/28/03 2:14:15 PM
SC		WAGNERJ	InPrep2	1/29/03 7:51:22 PM
SC		WAGNERJ	Prep2C	2/5/03 11:05:22 AM
SC		HAMMERL	Sep1C	2/7/03 8:44:34 AM
SC		DOWNEYS	Sep2C	2/10/03 11:35:12 AM
SC		BlackCL	InCnt1	2/10/03 12:18:49 PM
SC		BlackCL	CalcC	2/11/03 9:21:35 AM
AC		BELSITOB	1/28/03 2:14:15 PM	
AC		WAGNERJ	1/29/03 7:51:22 PM	
AC		WAGNERJ	2/5/03 11:05:22 AM	
AC		HAMMERL	2/7/03 8:44:34 AM	
AC		DOWNEYS	2/10/03 11:35:12 AM	
AC		BlackCL	2/10/03 12:18:49 PM	
AC		BlackCL	2/11/03 9:21:35 AM	

AC: Accepting Entry, SC: Status Change

STL Richland

Richland Wa.

2/21/03 2:44:13 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.8A NI-59 PrpRC5013, SepRC5069
ME Nickel-59**PRIORITY**

Pipet #: _____

Report Due: 02/12/2003 **W03954**

SI CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 3051473 SOIL pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Initial Aliquot Analyzed

Work Order, Lot, Sample Date/Time	<i>Final</i> Total Amt/Unit (g)	<i>Initial</i> Aliquot Amt/Unit (g)	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AW J3A220291-1-SAMP	1.22	1.02g, in	NITA1405 02/07/03				106	L2	1653	2/28/2003 <i>BP</i>
01/21/2003 08:25			AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGV-1-AV J3A220291-2-SAMP	1.22	1.02g, in	NITA1406 02/07/03					L3	1707 <i>1658</i> 2/28/2003	2/28/2003 <i>BP</i>
01/21/2003 08:30			AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
3 FGHGV-1-AW-X J3A220291-2-DUP	1.20	1.0g, in	NITA1407 02/07/03					L2	1842	2/28/2003 <i>BP</i>
01/21/2003 08:30			AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FH0WV-1-AA-B J3B200000-473-BLK	1.20	1.0g, in	NITA1408 02/07/03					L3	2320	2/28/2003 <i>BP</i>
01/21/2003 08:30			AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
5 FH0WV-1-AC-C J3B200000-473-LCS	1.20	1.0g, in	NISC0012 01/30/03					L2	2317	↓
01/21/2003 08:30			AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

Richland Wa. r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

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WO Cnt: 5

Prep_SamplePrep v4.6

2/21/03 2:44:14 PM

Sample Preparation/Analysis

Balance Id:1120373922

8A NI-59 PrpRC5013, SepRC5069

ME Nickel-59

Pipet #: _____

Report Due: 02/12/2003

5I CLIENT: HANFORD

PRIORITY

Sep1 DT/Tm Tech:

Batch: 3051473

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
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FGHGQ1AW-SAMP Constituent List:

Ni-59 RDL:30 pCi/g LCL: UCL: RPD:

FHOWV1AA-BLK:

Ni-59 RDL:30 pCi/g LCL: UCL: RPD:

FHOWV1AC-LCS:

FGHGQ1AW-SAMP Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FHOWV1AA-BLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FHOWV1AC-LCS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

3/5/03 6:27:40 PM

ICOC Fraction Transfer/Status Report

ByDate: 2/3/03, 3/6/03, Batch: '3051473', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting		Comments
3051473					
AC	CalcC	WAGNERJ	2/21/03 2:01:30 PM		
SC		WagarR	IsBatched	2/20/03 4:07:54 PM	ICOC_RADCALC v4.5.3.2
SC		WAGNERJ	InPrep2	2/21/03 2:01:30 PM	RICH-RC-5013 REVISION 4
SC		WAGNERJ	Prep2C	2/24/03 11:07:38 AM	RICH-RC-5013 REVISION 4
SC		ManisD	InSep1	2/24/03 2:40:35 PM	RICH-RC-5069 REVISION 4
SC		ManisD	Sep1C	2/28/03 2:41:03 PM	RICH-RC-5069 REVISION 4
SC		DAWKINSO	InCnt1	2/28/03 3:09:38 PM	RICH-RD-0007 REVISION 3
SC		BlackCL	CalcC	3/4/03 5:22:58 AM	RICH-RD-0007 REVISION 3
AC		WAGNERJ	2/24/03 11:07:38 AM		
AC		ManisD	2/24/03 2:40:35 PM		
AC		ManisD	2/28/03 2:41:03 PM		
AC		DAWKINSO	2/28/03 3:09:38 PM		
AC		BlackCL	3/4/03 5:22:58 AM		

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

1/24/2003 11:45:49 AM

Sample Preparation/Analysis

Balance Id: PB3001-5

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

AX Gamma PrpRC5013/5017

TA Gamma by HPGE

SI CLIENT: HANFORD

PRIORITY

Pipet #: N/A

Report Due: 02/12/2003

W03984

Sep1 DT/Tm Tech:

Batch: 3024348 SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: NB

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AK J3A220291-1-SAMP	385.4						5200 600	68	214 0314	2/3/03 6
01/21/2003 08:25			AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGV-1-AK J3A220291-2-SAMP	362.7								66 1710	2/3/03 6
01/21/2003 08:30			AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
3 FGHGV-1-AP-X J3A220291-2-DUP	362.7								61 0317	
01/21/2003 08:30			AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FGLT8-1-AA-BX J3A240000-348-MBLK	348.0	OSBK					5200		62 0315	
01/21/2003 08:30 1/28/03			AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
5 FGLT8-1-AC-CM J3A240000-348-MLCS	200.01	CAL 491							66 0316	
01/21/2003 08:30 1/28/03			AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:

Comments:

Recount done on different detector. FGHGV-1-AK NB 1/28/03

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AK-SAMP Constituent List:

Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:

STL Richland
Richland Wa.Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt,
r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 5

ICOC v4.5.3.2

1/24/2003 11:45:49 AM

Sample Preparation/Analysis

Balance Id:

AX Gamma PrpRC5013/5017

Pipet #: _____

TA Gamma by HPGE

PRIORITY

Report Due: 02/12/2003

5I CLIENT: HANFORD

Sep1 DT/Tm Tech:

Batch: 3024348

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date	
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
FGLT81AA-MBLK:											
Co-60	RDL:5.00E-02	pCi/g	LCL:	UCL:	RPD:	Cs-137	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Cs-137DA	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-152	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
Eu-154	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:	Eu-155	RDL:1.00E-01	pCi/g	LCL:	UCL:	RPD:
FGLT81AC-MLCS:											
Cs-137	RDL:0.1	pCi/g	LCL:70	UCL:130	RPD:35	Cs-137DA	RDL:0.1	pCi/g	LCL:70	UCL:130	RPD:35
K-40	RDL:--	pCi/g	LCL:70	UCL:130	RPD:35	Ra-226	RDL:0.1	pCi/g	LCL:70	UCL:130	RPD:35
RA-228	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35	RA-228DA	RDL:0.2	pCi/g	LCL:70	UCL:130	RPD:35
U-238	RDL:	pCi/g	LCL:70	UCL:130	RPD:35						
FGHQ1AK-SAMP Calc Info:											
Uncert Level (#s): 2		Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B						
FGLT81AA-MBLK:											
Uncert Level (#s): 2		Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B						
FGLT81AC-MLCS:											
Uncert Level (#s): 2		Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B						

2/5/03 5:16:21 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/6/03, 2/6/03, Batch: '3024348', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024348				
AC	CalcC	BELSITOB	1/27/03 4:04:46 PM	
SC		WagarR	IsBatched	1/24/03 11:45:35 AM
SC		BELSITOB	InPrep	1/27/03 4:04:46 PM
SC		BELSITOB	InPrep	1/27/03 4:05:00 PM
SC		BELSITOB	Prep1C	1/28/03 2:13:53 PM
SC		BELSITOB	Prep1C	1/28/03 2:13:57 PM
SC		DAWKINSO	InCnt1	1/28/03 2:45:55 PM
SC		BlackCL	CalcC	2/4/03 10:03:52 AM
AC		BELSITOB	1/27/03 4:05:00 PM	
AC		BELSITOB	1/28/03 2:13:53 PM	
AC		BELSITOB	1/28/03 2:13:57 PM	
AC		DAWKINSO	1/28/03 2:45:55 PM	
AC		BlackCL	2/4/03 10:03:52 AM	

AC: Accepting Entry; SC: Status Change

STL Richland
Richland Wa.

1/29/03 4:49:04 PM

Sample Preparation/Analysis

Balance Id:1120373922 /#02

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.CH Sr-Total PrpRC5013, SepRC5006
TH Total Strontium by GPC
SI CLIENT: HANFORD**PRIORITY**

Pipet #: NA

Report Due: 02/12/2003 **WO3954**

Sep1 DT/Tm Tech: 1/31/03

L: 21 PM

Batch: 3024346 SOIL pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech: NA

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AD J3A220291-1-SAMP	6.0g,in		SRTA8575 12/06/02 09/19/02,r				88.1	50	31A	2006 2/1/2003 op
01/21/2003 08:25		AmtRec: LP,125P	#Containers: 2					Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGV-1-AD J3A220291-2-SAMP	6.0g,in		SRTA8576 12/06/02 09/19/02,r				89.2		31B	2006 2/1/2003 op
01/21/2003 08:30		AmtRec: LP,125P	#Containers: 2					Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
3 FGHGV-1-AN-X J3A220291-2-DUP	6.0g,in		SRTA8577 12/06/02 09/19/02,r				87.8		31D	2006 2/1/2003 op
01/21/2003 08:30		AmtRec: LP,125P	#Containers: 2					Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FGLT7-1-AA-B J3A240000-346-BLK	6.0g,in		SRTA8578 12/06/02 09/19/02,r				77.2		32A	2006 2/1/2003 op
01/21/2003 08:30		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:
5 FGLT7-1-AC-C J3A240000-346-LCS	6.0g,in		STSB0692 01/15/03 11/25/02,r				78.6		32B	2006
01/21/2003 08:30		AmtRec:	#Containers: 1					Scr Rst:	Alpha:	Beta:

Comments:

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AD-SAMP Constituent List:

Sr-90 RDL:1 pCi/g LCL:70 UCL:130 RPD:35

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2
Richland Wa. r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

1/29/03 4:49:05 PM

Sample Preparation/Analysis

Balance Id:1120373922

CH Sr-Total PrpRC5013, SepRC5006
TH Total Strontium by GPC
5I CLIENT: HANFORD

PRIORITY

Pipet #: _____

Report Due: 02/12/2003

Sep1 DT/Tm Tech:

Batch: 3024346

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
FGLT71AA-BLK:										
Sr-90 RDL:1		pCi/g LCL:		UCL:		RPD:				
FGLT71AC-LCS:										
Sr-90 RDL:1		pCi/g LCL:70		UCL:130		RPD:35				
FGHGQ1AD-SAMP Calc Info:										
Uncert Level (#s): 2		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B		
FGLT71AA-BLK:										
Uncert Level (#s): 2		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B		
FGLT71AC-LCS:										
Uncert Level (#s): 2		Decay to SaDt: Y		Blk Subt.: N		Sci.Not.: Y		ODRs: B		

2/6/03 10:34:39 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/7/03, 2/7/03, Batch: '3024346', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024346				
AC		CalcC	BELSITOB 1/27/03 4:05:30 PM	
SC		WagarR	IsBatched 1/24/03 11:45:35 AM	ICOC_RADCALC v4:5.3.2
SC		BELSITOB	InPrep 1/27/03 4:05:30 PM	RICH-RC-5013 REVISION 4
SC		BELSITOB	Prep1C 1/28/03 2:14:25 PM	RICH-RC-5013 REVISION 4
SC		WAGNERJ	InPrep2 1/29/03 4:46:18 PM	RICH-RC-5013 REVISION 4
SC		WAGNERJ	Prep2C 1/30/03 9:00:40 AM	RICH-RC-5013 REVISION 4
SC		FABREM	InSep1 1/30/03 9:11:50 AM	RICH-RC-5006 REVISION 5
SC		FABREM	Sep1C 2/1/03 9:31:14 AM	RICH-RC-5006 REVISION 5
SC		DAWKINSO	InCnt1 2/1/03 1:05:33 PM	RICH-RD-0003 REVISION 3
SC		DAWKINSO	CalcC 2/2/03 12:45:04 PM	RICH-RD-0003 REVISION 3
AC		BELSITOB	1/28/03 2:14:25 PM	
AC		WAGNERJ	1/29/03 4:46:18 PM	
AC		WAGNERJ	1/30/03 9:00:40 AM	
AC		FABREM	1/30/03 9:11:50 AM	
AC		FABREM	2/1/03 9:31:14 AM	
AC		DAWKINSO	2/1/03 1:05:33 PM	
AC		DAWKINSO	2/2/03 12:45:04 PM	

AC: Accepting Entry; SC: Status Change

STL Richland
Richland Wa.

1/24/2003 11:45:50 AM

Sample Preparation/Analysis

Balance Id: 029

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
SI CLIENT: HANFORD**PRIORITY**Pipet #: NA

Report Due: 02/12/2003

W03954

Sep1 DT/Tm Tech: 1-28-03 am

Batch: 3024350 SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

NA

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AL J3A220291-1-SAMP								
01/21/2003 08:25		AmtRec: LP,125P	#Containers: 2		Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g	
2 FGHGV-1-AL J3A220291-2-SAMP								
01/21/2003 08:30		AmtRec: LP,125P	#Containers: 2		Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g	
3 FGHGV-1-AR-X J3A220291-2-DUP								
01/21/2003 08:30		AmtRec: LP,125P	#Containers: 2		Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g	
4 FGLVD-1-AA-B J3A240000-350-BLK								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	
5 FGLVD-1-AC-C J3A240000-350-LCS								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	
6 FGLVD-1-AD-BN J3A240000-350-IBLK								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	
7 FGLVD-1-AE-BN J3A240000-350-IBLK								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	

STL Richland

Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt,

Richland Wa. 8

r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7

ICOC v4.5.3.2

1/24/2003 11:45:51 AM

Sample Preparation/Analysis

Balance Id: 029

5S C-14 Prp/SepRC5022
S3 Carbon-14 by Liquid Scint
5I CLIENT: HANFORD**PRIORITY**

Pipet #:

Report Due: 02/12/2003

Sep1 DT/Tm Tech: 1-28-03 pm

Batch: 3024350

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
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Comments:

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FQHGQ1AL-SAMP Constituent List:

C-14	RDL:50	pCi/g	LCL:70	UCL:130	RPD:35
FGLVD1AA-BLK:					
C-14	RDL:50	pCi/g	LCL:	UCL:	RPD:
FGLVD1AC-LCS:					
C-14	RDL:50	pCi/g	LCL:70	UCL:130	RPD:35
FGLVD1AD-IBLK:					
C-14	RDL:50	pCi/g	LCL:	UCL:	RPD:
FGLVD1AE-IBLK:					
C-14	RDL:50	pCi/g	LCL:	UCL:	RPD:

FQHGQ1AL-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVD1AA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVD1AC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVD1AD-IBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVD1AE-IBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

2/6/03 8:41:48 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/7/03, 2/7/03, Batch: '3024350', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024350				
AC	CalcC	McDowellD	1/28/03 8:59:46 AM	
SC		WagarR	IsBatched	1/24/03 11:45:35 AM
SC		McDowellD	InSep1	1/28/03 8:59:46 AM
SC		McDowellD	Sep1C	1/28/03 2:20:53 PM
SC		DAWKINSO	InCnt1	1/28/03 2:47:22 PM
SC		BlackCL	CalcC	1/29/03 9:29:01 AM
AC		McDowellD	1/28/03 2:20:53 PM	ICOC_RADCALC v4.5.3.2
AC		DAWKINSO	1/28/03 2:47:22 PM	RICH-RC-5022 REVISION 3
AC		BlackCL	1/29/03 9:29:01 AM	RICH-RC-5022 REVISION 3
				RICH-RD-0001 REVISION 2
				RICH-RD-0001 REVISION 2

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

2/3/03 7:27:48 AM

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

Sample Preparation/Analysis

AF NI-63 PrpRC5013/5019, SepRC5069
S4 Nickel by ICP and Nickel-63 by Liquid Scint
5I CLIENT: HANFORD

Balance Id:1120373922 / AB54-S

PRIORITY

Pipet #: _____

Report Due: 02/12/2003 W03954

Sep1 DT/Tm Tech:

Batch: 3024345 SOIL pCi/g PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None All Tests: 3024338 DWEA, 3024341 88OV, 3024342 6ISO, 3024343 6ISX, 3024344 7SSR, 3024345 AFS4, 3024346 CHTH, 3024348 AXTA, 3024349 ATS6, 3024350 5SS3,

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AE J3A220291-1-SAMP			0.255g,in	0.255g	NITA1227 01/29/03		100			
01/21/2003 08:25	AmtRec: LP,125P		#Containers: 2					Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGQ-1-AU-X J3A220291-1-DUP			0.2568g,in	0.257g	NITA1228 01/29/03					
01/21/2003 08:25	AmtRec: LP,125P		#Containers: 2					Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
3 FGHGV-1-AE J3A220291-2-SAMP			0.2548g,in	0.255g	NITA1229 01/29/03					
01/21/2003 08:30	AmtRec: LP,125P		#Containers: 2					Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FGHGV-1-AM-S J3A220291-2-MS										
01/21/2003 08:30	AmtRec: LP,125P		#Containers: 2					Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
5 FGLTP-1-AA-B J3A240000-345-BLK			0.25g,in	0.25g	NITA1230 01/29/03					
01/21/2003 08:25	AmtRec:		#Containers: 1					Scr Rst:	Alpha:	Beta:
6 FGLTP-1-AC-C J3A240000-345-LCS			0.25g,in	0.25g	NISA0466 12/17/02					
01/21/2003 08:25	AmtRec:		#Containers: 1					Scr Rst:	Alpha:	Beta:
7 FGLTP-1-AD-B J3A240000-345-BLK										
01/21/2003 08:25	AmtRec:		#Containers: 1					Scr Rst:	Alpha:	Beta:

STL Richland
Richland Wa.Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2
r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7
Prep_SamplePrep v4.6

2/3/03 7:27:49 AM

Sample Preparation/Analysis

Balance Id:

AF NI-63 PrpRC5013/5019, SepRC5069
S4 Nickel by ICP and Nickel-63 by Liquid Scint
SI CLIENT: HANFORD

Pipet #:

Report Due: 02/12/2003

PRIORITY

Sep1 DT/Tm Tech:

Batch: 3024345

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date	Total Amt /Unit	Total Acidified/Unit	Initial Aliquot Amt/Unit	Adj Aliq Amt (Un-Acidified)	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
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Comments:

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AE-SAMP Constituent List:

NI-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

FGHGV1AM-MS:

NI-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

FGLTP1AA-BLK:

NI-63 RDL:30 pCi/g LCL: UCL: RPD:

FGLTP1AC-LCS:

NI-63 RDL:30 pCi/g LCL:70 UCL:130 RPD:35

FGLTP1AD-BLK:

NI-63 RDL:30 pCi/g LCL: UCL: RPD:

FGHGQ1AE-SAMP Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGHGV1AM-MS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGLTP1AA-BLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGLTP1AC-LCS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGLTP1AD-BLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

2/18/2003 5:17:14 PM

ICOC Fraction Transfer/Status Report

ByDate: 1/19/2003, 2/19/2003, Batch: '3024345', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024345				
AC	Rev1C	BELSITOB	1/27/2003 4:05:26 PM	
SC		WagarR	IsBatched	1/24/2003 11:45:35 AM
SC		BELSITOB	InPrep	1/27/2003 4:05:26 PM
SC		BELSITOB	Prep1C	1/28/2003 2:14:20 PM
SC		WAGNERJ	InPrep2	2/3/2003 7:24:41 AM
SC		WAGNERJ	Prep2C	2/4/2003 8:12:10 AM
SC		ManisD	InSep1	2/4/2003 8:49:09 AM
SC		ManisD	Sep1C	2/5/2003 1:51:47 PM
SC		DAWKINSO	InCnt1	2/5/2003 3:41:57 PM
SC		BlackCL	CalcC	2/18/2003 2:03:12 PM
SC		SMITHP	Rev1C	2/18/2003 5:16:49 PM
AC		BELSITOB	1/28/2003 2:14:20 PM	ICOC_RADCALC v4.5.3.2
AC		WAGNERJ	2/3/2003 7:24:41 AM	RICH-RC-5013 REVISION 4
AC		WAGNERJ	2/4/2003 8:12:10 AM	RICH-RC-5013 REVISION 4
AC		ManisD	2/4/2003 8:49:09 AM	RICH-RC-5013 REVISION 4
AC		ManisD	2/5/2003 1:51:47 PM	RICH-RC-5069 REVISION 4
AC		DAWKINSO	2/5/2003 3:41:57 PM	RICH-RC-5069 REVISION 4
AC		BlackCL	2/18/2003 2:03:12 PM	RICH-RD-0001 REVISION 2
AC		SMITHP	2/18/2003 5:16:49 PM	RICH-RD-0001 REVISION 2
				RICH-RC-0002 REVISION 5

AC: Accepting Entry; SC: Status Change

STL Richland
Richland Wa.

3/5/03 5:26:03 PM

Sample Preparation/Analysis

Balance Id:1120373922

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

AG Pu/241 PrpRC5013/5019, SepRC5010(5039)

SP Plutonium-241 by Liquid Scint

Pipet #:

Report Due: 02/12/2003

51 CLIENT: HANFORD

PRIORITY

Sep1 DT/Tm Tech:

Batch: 3062565 SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: 3051471, AGSO 3051471, AGSO 3062564, AGSO 3062564, AGSO

Prep Tech: ,WAGNERJ

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-2-AV J3A220291-1-SAMP	2.03g,in	PUTD1831 03/05/03 12/20/02 r			100			
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
2 FGHGQ-2-A1-X J3A220291-1-DUP	2.0g,in	PUTD1832 03/05/03 12/20/02 r						
01/21/2003 08:25	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g
3 FGHGV-2-AT J3A220291-2-SAMP	2.0g,in	PUTD1833 03/05/03 12/20/02 r						
01/21/2003 08:30	AmtRec: LP,125P	#Containers: 2				Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g
4 FJHPC-1-AA-B J3C030000-565-BLK	2.0g,in	PUTD1834 03/05/03 12/20/02 r						
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
5 FJHPC-1-AC-C J3C030000-565-LCS	2.0g,in	241A0078 02/28/03 07/26/02 r						
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
6 FJHPC-1-AD-BX J3C030000-565-MBLK	1.98g,in	PUTD1835 03/05/03 12/20/02 r						
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:
7 FJHPC-1-AE-CM J3C030000-565-MLCS	1.97g,in	241A0079 02/28/03 07/26/02 r						
01/21/2003 08:25	AmtRec:	#Containers: 1				Scr Rst:	Alpha:	Beta:

STL Richland Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt, s1 - Sep1, s2 - Sep2

Richland Wa. r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7

Prep_SamplePrep v4.6

3/5/03 5:26:06 PM

Sample Preparation/Analysis

Balance Id:

AG Pu-241 PrpRC5013/5019, SepRC5010(5039)

Pipet #:

SP Plutonium-241 by Liquid Scint

SI CLIENT: HANFORD

PRIORITY

Report Due: 02/12/2003

Sep1 DT/Tm Tech:

Batch: 3062565

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
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8 FJHPC-1-AF-BN

J3C030000-565-IBLK

01/21/2003 08:25

AmtRec:

#Containers: 1

Scr Rst:

Alpha:

Beta:

Comments: Samples were muffled. In 3-b-03

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ2AV-SAMP Constituent List:

Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35
FJHPC1AA-BLK:											
Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35
FJHPC1AC-LCS:											
Pu-239	RDL:	pCi/g	LCL:70	UCL:130	RPD:35	Pu-241	RDL:15	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35						
FJHPC1AD-MBLK:											
Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35
FJHPC1AE-MLCS:											
Pu-239	RDL:	pCi/g	LCL:70	UCL:130	RPD:35	Pu-241	RDL:15	pCi/g	LCL:70	UCL:130	RPD:35
Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35						
FJHPC1AF-IBLK:											
Pu-241	RDL:15	pCi/g	LCL:	UCL:	RPD:	Pu-242	RDL:	pCi/g	LCL:70	UCL:130	RPD:35

FGHGQ2AV-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHPC1AA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHPC1AC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FJHPC1AD-MBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

STL Richland Key: In - Initial Amt, fi - Final Amt, dl - Diluted Amt, s1 - Sep1, s2 - Sep2

Richland Wa. r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 2

WO Cnt: 8
Prep_SamplePrep v4.6

3/5/03 5:26:07 PM

Sample Preparation/Analysis

Balance Id:

AG Pu/241 PrpRC5013/5019, SepRC5010(5039)

PRIORITY

Pipet #:

SP Plutonium-241 by Liquid Scint

5I CLIENT: HANFORD

Report Due: 02/12/2003

Sep1 DT/Tm Tech:

Batch: 3062565

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
--------------------------------------	-------------------	-----------------------------	------------------------	------------------------	-------------------	----------------	---------------------------------	--------------------------

FJHPC1AE-MLCS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FJHPC1AF-IBLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

3/17/03 5:15:23 PM

ICOC Fraction Transfer/Status Report

ByDate: 2/15/03, 3/18/03, Batch: '3062565', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3062565				
AC	CalcC	WAGNERJ	3/4/03 1:50:11 PM	
SC		AndersonP	IsBatched	3/4/03 7:43:20 AM
SC		WAGNERJ	InPrep2	3/4/03 1:50:11 PM
SC		WAGNERJ	Prep2C	3/6/03 5:03:52 PM
SC		HAMMERL	InSep1	3/7/03 8:08:14 AM
SC		BlackCL	InCnt1	3/14/03 11:45:13 AM
SC		BlackCL	CalcC	3/16/03 7:42:51 AM
AC		WAGNERJ	3/6/03 5:03:52 PM	
AC		HAMMERL	3/7/03 8:08:14 AM	
AC		BlackCL	3/14/03 11:45:13 AM	
AC		BlackCL	3/16/03 7:42:51 AM	

ICOC_RADCALC v4.5.3.2
RICH-RC-5019 REVISION 4
RICH-RC-5019 REVISION 4
RICH-RC-5010 REVISION 3
RICH-RD-0001 REVISION 2
RICH-RD-0001 REVISION 2

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

1/24/2003 11:45:50 AM

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

Sample Preparation/Analysis

AT H-3 Prp/SepRC5037
S6 Tritium by Liquid Scint
SI CLIENT: HANFORD**PRIORITY**

Balance Id: 028

Pipet #: _____

Report Due: 02/12/2003

W03954

Sep1 DT/Tm Tech: 1-28-03 dm

Batch: 3024349 SOIL

pCi/g

PM, Quote: BG2, 27038

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
1 FGHGQ-1-AJ J3A220291-1-SAMP								
01/21/2003 08:25		AmtRec: LP,125P	#Containers: 2		Scr Rst:	Alpha: 5.31E+01 pCi/g	Beta: 2.02E+01 pCi/g	
2 FGHGV-1-AJ J3A220291-2-SAMP								
01/21/2003 08:30		AmtRec: LP,125P	#Containers: 2		Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g	
3 FGHGV-1-AQ-X J3A220291-2-DUP								
01/21/2003 08:30		AmtRec: LP,125P	#Containers: 2		Scr Rst:	Alpha: 9.02E+01 pCi/g	Beta: 3.18E+01 pCi/g	
4 FGLVA-1-AA-B J3A240000-349-BLK								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	
5 FGLVA-1-AC-C J3A240000-349-LCS								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	
6 FGLVA-1-AD-BN J3A240000-349-IBLK								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	
7 FGLVA-1-AE-BN J3A240000-349-IBLK								
01/21/2003 08:30		AmtRec:	#Containers: 1		Scr Rst:	Alpha:	Beta:	

STL Richland
Richland Wa.Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt,
r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7

ICOC v4.5.3.2

1/24/2003 11:45:50 AM

Sample Preparation/Analysis

PRIORITY

Balance Id: 028

AT H-3 Prp/SepRC5037
S6 Tritium by Liquid Scint
SI CLIENT: HANFORD

Pipet #: _____

Report Due: 02/12/2003

Sep1 DT/Tm Tech: 1-28-03 dm

Batch: 3024349

pCi/g

Sep2 DT/Tm Tech:

SEQ Batch, Test: None

Prep Tech:

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
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Comments:

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AJ-SAMP Constituent List:

H-3	RDL:400	pCi/g	LCL:70	UCL:130	RPD:35
FGLVALAA-BLK:					
H-3	RDL:400	pCi/g	LCL:	UCL:	RPD:
FGLVALAC-LCS:					
H-3	RDL:400	pCi/g	LCL:70	UCL:130	RPD:35
FGLVALAD-IBLK:					
H-3	RDL:400	pCi/g	LCL:	UCL:	RPD:
FGLVALAE-IBLK:					
H-3	RDL:400	pCi/g	LCL:	UCL:	RPD:

FGHGQ1AJ-SAMP Calc Info:

Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVALAA-BLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVALAC-LCS:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVALAD-IBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B
FGLVALAE-IBLK:				
Uncert Level (#s): 2	Decay to SaDt: Y	Blk Subt.: N	Sci.Not.: Y	ODRs: B

2/4/03 9:35:28 AM

ICOC Fraction Transfer/Status Report

ByDate: 1/5/03, 2/5/03, Batch: '3024349', User: *All Order by BatchNbr,WorkOrderNbr,DateTimeAccepting

Q Batch	Work Ord	CurStatus	Accepting	Comments
3024349				
AC	InCnt1	McDowellD	1/28/03 8:59:28 AM	
SC		WagarR	IsBatched 1/24/03 11:45:35 AM	ICOC_RADCALC v4.5.3.2
SC		McDowellD	InSep1 1/28/03 8:59:28 AM	RICH-RC-5037 REVISION 3
SC		McDowellD	Sep1C 1/28/03 2:21:05 PM	RICH-RC-5037 REVISION 3
SC		DAWKINSO	InCnt1 1/28/03 2:47:32 PM	RICH-RD-0001 REVISION 2
SC		BlackCL	InCnt1 1/29/03 12:48:23 PM	RICH-RD-0001 REVISION 2
AC		McDowellD	1/28/03 2:21:05 PM	
AC		DAWKINSO	1/28/03 2:47:32 PM	
AC		BlackCL	1/29/03 12:48:23 PM	

99

AC: Accepting Entry; SC: Status Change

STL Richland

Richland Wa.

1/24/2003 11:45:45 AM

127642, BECHTEL HANFORD, INC.
Bechtel Hanford, Inc.

Sample Preparation/Analysis

DW Alkaline Digestion by method 3060A
EA Chromium, Hexavalent (7196A)
SI CLIENT: HANFORD

Balance Id:

Pipet #: _____

Report Due: 02/12/2003

W03954

PRIORITY

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Prep Tech:

Batch: 3024338 SOIL

mg/kg

PM, Quote: BG2, 27038

SEQ Batch, Test: None

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
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1 FGHGQ-1-AA

J3A220291-1-SAMP

01/21/2003 08:25

AmtRec: LP,125P

#Containers: 2

Scr Rst:

Alpha: 5.31E+01 pCi/g

Beta: 2.02E+01 pCi/g

2 FGHGQ-1-AM-S

J3A220291-1-MS

01/21/2003 08:25

AmtRec: LP,125P

#Containers: 2

Scr Rst:

Alpha: 5.31E+01 pCi/g

Beta: 2.02E+01 pCi/g

3 FGHGQ-1-AN-X

J3A220291-1-DUP

01/21/2003 08:25

AmtRec: LP,125P

#Containers: 2

Scr Rst:

Alpha: 5.31E+01 pCi/g

Beta: 2.02E+01 pCi/g

4 FGHGQ-1-AP-S

J3A220291-1-MS

01/21/2003 08:25

AmtRec: LP,125P

#Containers: 2

Scr Rst:

Alpha: 5.31E+01 pCi/g

Beta: 2.02E+01 pCi/g

5 FGHGV-1-AA

J3A220291-2-SAMP

01/21/2003 08:30

AmtRec: LP,125P

#Containers: 2

Scr Rst:

Alpha: 9.02E+01 pCi/g

Beta: 3.18E+01 pCi/g

6 FGLR3-1-AA-B

J3A240000-338-BLK

01/21/2003 08:25

AmtRec:

#Containers: 1

Scr Rst:

Alpha:

Beta:

7 FGLR3-1-AC-C

J3A240000-338-LCS

01/21/2003 08:25

AmtRec:

#Containers: 1

Scr Rst:

Alpha:

Beta:

STL Richland
Richland Wa.Key: In - Initial Amt, fi - Final Amt, di - Diluted Amt,
r - Reference date, ec-Enrichment Cell, ct-Cocktailed Added

Page 1

WO Cnt: 7

ICOC v4.5.3.2

100

1/24/2003 11:45:46 AM

Sample Preparation/Analysis

Balance Id:

DW Alkaline Digestion by method 3060A

EA Chromium, Hexavalent (7196A)

PRIORITY

Pipet #:

Report Due: 02/12/2003

SI CLIENT: HANFORD

Sep1 DT/Tm Tech:

Sep2 DT/Tm Tech:

Batch: 3024338

mg/kg

Prep Tech:

SEQ Batch, Test: None

Work Order, Lot, Sample Date/Time	Total Amt/Unit	Initial Aliquot Amt/Unit	QC Tracer Prep Date	QC Vial 2 Prep Date	Dish Size	Ppt or Geometry	Count Time Min	Detector Id	Count On Off (24hr) Circle	CR Analyst, Init/Date
--------------------------------------	-------------------	-----------------------------	------------------------	------------------------	--------------	--------------------	-------------------	----------------	---------------------------------	--------------------------

Comments:

All Clients for Batch:

127642, BECHTEL HANFORD, INC.

Bechtel Hanford, Inc.

, BG2, 27038

FGHGQ1AA-SAMP Constituent List:

FGHGQ1AM-MS Constituent List:

FGHGQ1AP-MS:

FGLR31AA-BLK:

FGLR31AC-LCS:

FGHGQ1AA-SAMP Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGHGQ1AM-MS Calc Info:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGHGQ1AP-MS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGLR31AA-BLK:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

FGLR31AC-LCS:

Uncert Level (#s): 2 Decay to SaDt: Y Blk Subt.: N Sci.Not.: Y ODRs: B

ANALYTICAL REPORT

PROJECT NO. 105-F RX PH IV

B02-030

Lot #: F3A270166

SDG #: W03954

Joan Kessner

Bechtel Hanford, Inc.
3190 George Washington Way
Richland, WA 99352

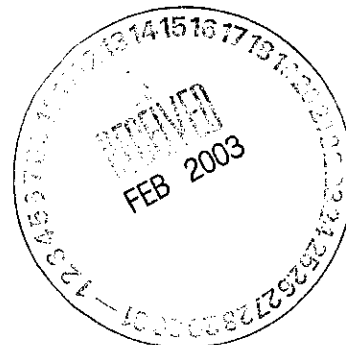
SEVERN TRENT LABORATORIES, INC.

M Ward

MARTI WARD
Project Manager

February 12, 2003

Severn Trent Laboratories, Inc.
STL St. Louis • 13715 Rider Trail North, Earth City, MO 63045
Tel 314 298 8566 Fax 314 298 8757 • www.stl-inc.com



CASE NARRATIVE

Bechtel Hanford Incorporated
3190 George Washington Way
Richland, Washington 99352

February 12, 2003
Attention: Joan Kessner

Project Number	:	50927
SAF	:	B02-030
SDG	:	W03954
Number of Samples	:	two
Sample Matrix	:	soil
Data Deliverable	:	Summary
Date SDG Closed	:	January 24, 2003

II. Introduction

On January 25, 2003, one (1) "solid" sample was received by STL-St. Louis for chemical analysis. The samples were received at the St. Louis lab within temperature criteria. See the COC and CUR forms for details of sample condition and temperature. See the attached Sample Summary form for the Lab ID's and corresponding Client Ids.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits. This report is not complete without the Case Narrative. Results are reported "as received"; i.e. wet weight, unless otherwise noted on the data sheets.

Analyses requested: see the attached methods summary sheet

Deviation from Request: none

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBK- Quality Control Blank, Method Blank
QCLCS- Quality Control Laboratory Control Sample, Blank Spike
MS- Matrix Spike.
DUP- Matrix Duplicate
MSD- Matrix Spike Duplicate.

Bechtel Hanford Incorporated
February 12, 2003
Project Number: 50927
SDG: W03954
Page 2

V. Comments

General:

The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Metals:

A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

There were no comments or non-conformances associated with this data.

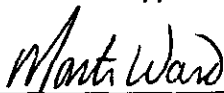
PCB:

A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

The surrogate recovery in the LCS and MS/MSD were above the control limits. The individual spike compounds recovered within criteria. The samples have acceptable surrogate recovery. There were no target compounds detected in the samples, demonstrating that the high bias of the surrogates did not adversely affect the data.

I certify that this Summary is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:



Marti Ward
St. Louis Project Manager

SAMPLE SUMMARY**F3A270166**

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
FGPGC	001	J00FB6	01/21/03	08:30
FGPGJ	002	J00FB7	01/21/03	08:25

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F3A270166

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD
PCBs by SW-846 8082	SW846 8082	SW846 3550B/366
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

CWT 5804

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B02-030-037		Page 1 of 1	
Collector Stankovich / <u>Mitchell</u>		Company Contact Rikki Thoren/Mike Stankov		Telephone No. 521-8003		Project Coordinator TRENT, SJ		Price Code 8L Data Turnaround 21 Days	
Project Designation 105-F Rx Phase IV Soils (Side-slope, overburden, under & ad)		Sampling Location 105F-Overburden Zone		SAF No. B02-030		Air Quality			
Ice Chest No. <u>ERC 99005</u>		Field Logbook No. EL-1535-8		COA <u>FL</u> R105FX200C <u>1.2-3</u>		Method of Shipment <u>FED EX</u>			
Shipped To Severn Trent Incorporated, <u>Richland</u> <u>1-2-03</u>		Offsite Property No. <u>A030100</u>		Bill of Lading/Air Bill No. <u>SEE 057C</u>					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Special Handling and/or Storage		Preservation	None	Cool 4C	None	Cool 4C			
		Type of Container	G/P	G	G	aG			
		No. of Container(s)	1	1	1	1			
		Volume	1000g	25g	500g	250g			
<u>W03854</u> SAMPLE ANALYSIS		See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082				
Sample No.	Matrix *	Sample Date	Sample Time						
J00FB6	SOIL	1-21-3	0830						
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From <u>M. Mitchell</u> <u>121-3</u>		Date/Time <u>121-3 1434</u>		Received By/Stored In <u>3B/3728</u>		Date/Time <u>121-3 1434</u>		(1) Americium-241; Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-83); Tritium - H3; Carbon-14; Nickel-59; Nickel-63; Isotopic Plutonium; Plutonium-241; Strontium-90 -- Total Sr; Uranium - Isotopic (Complete) (Uranium-234, Uranium-235, Uranium-238) (2) Mercury - 7471 - (CV); ICP Metals - 6010A (Add-on) (Lead); ICP Metals - 6010A (TAL) (Barium) Personnel not available to relinquish samples from the 3728 Ref # <u>3B</u> on <u>1-24-03</u>	
Relinquished By/Removed From <u>3B/3728</u>		Date/Time <u>124 03 1100</u>		Received By/Stored In <u>SJ O'Neil</u>		Date/Time <u>124 03 1100</u>			
Relinquished By/Removed From <u>SJ O'Neil</u>		Date/Time <u>124 03 1100</u>		Received By/Stored In <u>FED EX</u>		Date/Time <u>FED EX</u>			
Relinquished By/Removed From <u>FGD 502</u>		Date/Time <u>1-25-03</u>		Received By/Stored In <u>0840</u>		Date/Time <u>0840</u>			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

CUR 5804

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B02-030-038		Page 1 of 1	
Collector Stankovich / Mitchell		Company Contact Rikki Thoren/Mike Stankov		Telephone No. 521-8003		Project Coordinator TRENT, SJ		Price Code 8L Data Turnaround 21 Days	
Project Designation 105-F Rx Phase IV Soils (Side-slope, overburden, under & ad		Sampling Location 105F - Shallow Zone		SAF No. B02-030		Air Quality <input type="checkbox"/>			
Ice Chest No. 1A2		Field Logbook No. EL-1535-8		COA F2 R105FX200C THM F21-03		Method of Shipment Federal Express			
Shipped To S+ Louis Severn Trent Incorporated, Richmond RE 1-22-03		Offsite Property No. HMSR 000093		Bill of Lading/Air Bill No. N/A					
POSSIBLE SAMPLE HAZARDS/REMARKS Radioactive Special Handling and/or Storage		Preservation	None	Cool 4C	None	Cool 4C			
		Type of Container	G/P	G	G	AG			
		No. of Container(s)	1		1	1			
		Volume	1000g	25g	500g	250g			
W03854 SAMPLE ANALYSIS		See item (1) in Special Instructions	Chromium Hex - 7196	See item (2) in Special Instructions	PCBs - 8082				
Sample No.	Matrix *	Sample Date	Sample Time						
J00FB7	SOIL	01-21-03	0825	4	✓	✓	✓		
CHAIN OF POSSESSION				SPECIAL INSTRUCTIONS				Matrix *	
Relinquished By/Removed From M. Stankovich 12-13		Date/Time 1/21/03		Received By/Stored In SB/3725		Date/Time 1-21-3 1430		<p>(1) Americium-241; Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Barium-B3); Tritium - H3; Carbon-14; Nickel-59; Nickel-63; Isotopic Plutonium; Plutonium-241; Strontium-90 - Total Sr; Uranium - Isotopic (Complete) (Uranium-234, Uranium-235, Uranium-238)</p> <p>(2) Mercury - 7471 - (CV); ICP Metals - 6010A (Add-on) (Lead); ICP Metals - 6010A (TAL) (Barium)</p> <p>Personnel not available to relinquish samples from the 3728 Ref # 3B on 1/22/03</p>	
Relinquished By/Removed From SB/3725 12403		Date/Time 0700		Received By/Stored In 21046/KL		Date/Time 12403 0700			
Relinquished By/Removed From 21046/KL 12403		Date/Time 0700		Received By/Stored In FED EX		Date/Time			
Relinquished By/Removed From FED EX		Date/Time		Received By/Stored In SLATKA 125-03		Date/Time 0840			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
Relinquished By/Removed From		Date/Time		Received By/Stored In		Date/Time			
LABORATORY SECTION		Received By		Title		Date/Time			
FINAL SAMPLE DISPOSITION		Disposal Method		Disposed By		Date/Time			

SEVERN

TRENT

SERVICES

Lot No.: F3A270166
W03854Condition Upon Receipt Form
St. Louis LaboratoryClient: RichlandDate: 1.25.03 Time: 0840Quote No: 50927 401 9345 025 ✓Initiated by: EWShipper/No: FedEx 1921 794 2503
7901 984 4028COC/RFA Numbers: 503-001-199Condition/Variance (Circle "Y" for yes and "N" for no. If "N" is circled, see notes for explanation): 802-030-0388037

1. <input checked="" type="radio"/> N	Sample received in undamaged condition.	5. <input checked="" type="radio"/> N	Sample volume sufficient for analysis.
2. <input checked="" type="radio"/> N	Sample received within $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Record temperature: <u>3, 5, 3</u>	6. <input checked="" type="radio"/> N	Sample received with Chain of Custody.
3. Y N <input checked="" type="radio"/> N/A	Sample received with proper pH**.	7. <input checked="" type="radio"/> N	Chain of Custody matches sample IDs on containers.
4. <input checked="" type="radio"/> N	Sample received in proper containers.	8. <input checked="" type="radio"/> N	Custody seal received intact and tamper evident on cooler.
		9. <input checked="" type="radio"/> N	Custody seal received intact and tamper evident on bottles.

* Temperature Variance Does Not Affect the Following Analyses: _____

** For DOE-AL (Pantex, LANL, Sandia, Timet) sites, remember to pH all containers received, except for VOA, TOX, and soils.

Notes:

Corrective Action:

- ☐ Client's Name: _____ Informed verbally on: _____ By: _____
- ☐ Client's Name: _____ Informed in writing on: _____ By: _____
- ☐ Sample(s) processed "as is".
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Sample Control Supervisor (or designate) Review: [Signature]Date: 1.25.03Project Management Review: [Signature]Date: 1.27.03

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE
THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR
INITIALS AND THE DATE NEXT TO THAT ITEM

5804

SL-ADMIN-0004, Revised 5/24/01

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SEMI-VOLATILE ORGANICS

BECHTEL HANFORD, INC.

Client Sample ID: J00FB6

GC Semivolatiles

Lot-Sample #....: F3A270166-001 Work Order #....: FGPGC1AG Matrix.....: SOLID
Date Sampled....: 01/21/03 Date Received...: 01/21/03
Prep Date.....: 01/28/03 Analysis Date...: 02/03/03
Prep Batch #....: 3028357
Dilution Factor: 1
% Moisture.....: 4.2 Method.....: SW846 8082

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>MDL</u>
Aroclor 1016	ND	34	ug/kg	13
Aroclor 1221	ND	34	ug/kg	13
Aroclor 1232	ND	34	ug/kg	13
Aroclor 1242	ND	34	ug/kg	13
Aroclor 1248	ND	34	ug/kg	13
Aroclor 1254	ND	34	ug/kg	7.4
Aroclor 1260	ND	34	ug/kg	7.4

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Decachlorobiphenyl	97	(50 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #....: F3A270166 Work Order #....: FGPGC1AR-MS Matrix.....: SOLID
 MS Lot-Sample #: F3A270166-001 FGPGC1AT-MSD
 Date Sampled....: 01/21/03 Date Received...: 01/21/03
 Prep Date.....: 01/28/03 Analysis Date...: 02/03/03
 Prep Batch #....: 3028357
 Dilution Factor: 1 % Moisture.....: 4.2

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD
Aroclor 1016	ND	174	236	ug/kg	136		SW846 8082
	ND	174	172	ug/kg	99 p	31	SW846 8082
Aroclor 1260	ND	174	240	ug/kg	138		SW846 8082
	ND	174	204	ug/kg	117	16	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	151 *	(14 - 150)
	259 *	(14 - 150)

NOTE (S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

* Surrogate recovery is outside stated control limits.

BECHTEL HANFORD, INC.

Client Sample ID: J00FB7

GC Semivolatiles

Lot-Sample #....: F3A270166-002 Work Order #....: FGPGJ1AG Matrix.....: SOLID
Date Sampled....: 01/21/03 Date Received...: 01/21/03
Prep Date.....: 01/28/03 Analysis Date...: 02/03/03
Prep Batch #....: 3028357
Dilution Factor: 1
% Moisture.....: 4.0 Method.....: SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
Aroclor 1016	ND	34	ug/kg	13
Aroclor 1221	ND	34	ug/kg	13
Aroclor 1232	ND	34	ug/kg	13
Aroclor 1242	ND	34	ug/kg	13
Aroclor 1248	ND	34	ug/kg	13
Aroclor 1254	ND	34	ug/kg	7.4
Aroclor 1260	ND	34	ug/kg	7.4

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	144	(50 - 150)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #....: F3A270166
MB Lot-Sample #: F3A280000-357

Work Order #....: FGRC41AA

Matrix.....: SOLID

Analysis Date...: 02/03/03
Dilution Factor: 1

Prep Date.....: 01/28/03

Prep Batch #....: 3028357

PARAMETER	RESULT	REPORTING		METHOD
		LIMIT	UNITS	
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082
		PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS		
Decachlorobiphenyl	132	(14 - 150)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #....: F3A270166 Work Order #....: FGRC41AC Matrix.....: SOLID
LCS Lot-Sample#: F3A280000-357
Prep Date.....: 01/28/03 Analysis Date...: 02/03/03
Prep Batch #....: 3028357
Dilution Factor: 1

<u>PARAMETER</u>	<u>SPIKE</u> <u>AMOUNT</u>	<u>MEASURED</u> <u>AMOUNT</u>	<u>UNITS</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>METHOD</u>
Aroclor 1016	167	162	ug/kg	97	SW846 8082
Aroclor 1260	167	195	ug/kg	117	SW846 8082

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
Decachlorobiphenyl	167 *	(63 - 150)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

METALS

BECHTEL HANFORD, INC.

Client Sample ID: J00FB6

TOTAL Metals

Lot-Sample #...: F3A270166-001

Matrix.....: SOLID

Date Sampled...: 01/21/03

Date Received...: 01/21/03

% Moisture.....: 4.2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 3027451						
Barium	54.7	20.9	mg/kg	SW846 6010B	01/27-02/03/03	FGPGCIAD
		Dilution Factor: 1		MDL.....: 0.44		
Lead	2.8 J	0.52	mg/kg	SW846 6010B	01/27-02/03/03	FGPGCIAE
		Dilution Factor: 1		MDL.....: 0.070		
Prep Batch #...: 3029135						
Mercury	0.012 B	0.035	mg/kg	SW846 7471A	01/29/03	FGPGCIAC
		Dilution Factor: 1		MDL.....: 0.0081		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

B Estimated result. Result is less than RL.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: F3A270166

Matrix.....: SOLID

Date Sampled...: 01/21/03

Date Received...: 01/21/03

PARAMETER	AMOUNT	SAMPLE SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
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MS Lot-Sample #: F3A270166-001 Prep Batch #...: 3027451

% Moisture.....: 4.2

Barium

54.7	209	282	mg/kg	109			SW846 6010B	01/27-02/03/03	FGPGC1AM
54.7	209	274	mg/kg	105	3.1		SW846 6010B	01/27-02/03/03	FGPGC1AN

Dilution Factor: 1

Lead

2.8	52.2	56.2	mg/kg	102			SW846 6010B	01/27-02/03/03	FGPGC1AP
2.8	52.2	56.6	mg/kg	103	0.70		SW846 6010B	01/27-02/03/03	FGPGC1AQ

Dilution Factor: 1

MS Lot-Sample #: F3A270166-001 Prep Batch #...: 3029135

% Moisture.....: 4.2

Mercury

0.012	0.174	0.184	mg/kg	99			SW846 7471A	01/29/03	FGPGC1AK
0.012	0.174	0.186	mg/kg	100	0.93		SW846 7471A	01/29/03	FGPGC1AL

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

BECHTEL HANFORD, INC.

Client Sample ID: J00FB7

TOTAL Metals

Lot-Sample #....: F3A270166-002

Matrix.....: SOLID

Date Sampled....: 01/21/03

Date Received...: 01/21/03

% Moisture.....: 4.0

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>WORK</u> <u>ORDER #</u>
Prep Batch #....: 3027451						
Barium	159	20.8	mg/kg	SW846 6010B	01/27-02/03/03	FGPGJ1AD
		Dilution Factor: 1		MDL.....: 0.44		
Lead	4.0 J	0.52	mg/kg	SW846 6010B	01/27-02/03/03	FGPGJ1AE
		Dilution Factor: 1		MDL.....: 0.070		
Prep Batch #....: 3029135						
Mercury	0.051	0.035	mg/kg	SW846 7471A	01/29/03	FGPGJ1AC
		Dilution Factor: 1		MDL.....: 0.0081		

NOTE(S) :

Results and reporting limits have been adjusted for dry weight.

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #....: F3A270166

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F3A270000-451 Prep Batch #....: 3027451						
Barium	ND	20.0	mg/kg	SW846 6010B	01/27-02/03/03	FGPQJ1AA
		Dilution Factor: 1				
Lead	0.13 B	0.50	mg/kg	SW846 6010B	01/27-02/03/03	FGPQJ1AC
		Dilution Factor: 1				
MB Lot-Sample #: F3A290000-135 Prep Batch #....: 3029135						
Mercury	ND	0.033	mg/kg	SW846 7471A	01/29/03	FGRX31AA
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #....: F3A270166

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: F3A270000-451 Prep Batch #....: 3027451							
Barium	392	464	mg/kg	118	SW846 6010B	01/27-02/03/03	FGPQJLAD
			Dilution Factor: 1				
Lead	95.0	108	mg/kg	114	SW846 6010B	01/27-02/03/03	FGPQJLAE
			Dilution Factor: 1				
LCS Lot-Sample#: F3A290000-135 Prep Batch #....: 3029135							
Mercury	9.41	9.02	mg/kg	96	SW846 7471A	01/29/03	FGRX31AC
			Dilution Factor: 10				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.